

Dr. Jyoti Parkash, PhD

Assistant Professor
 Centre for Animal Sciences
 School of Basic and Applied Sciences
 Central University Punjab, Bathinda, India 151001
 E-mail: jtpksh.sharma@gmail.com
 Phone: +91-8699212464

**Education:**

Degree	Institution	Year	Subject
Postdoctoral Training	Development and Plasticity of Postnatal, Brain, Jean-Pierre Aubert Research Center, INSERM U837, place de Verdun 59045 Lille, Cedex France	2008-14	Hormone-dependent development and plasticity of the metabolic brain
Ph.D.	Guru Nanak Dev University (GNDU) Amritsar, Punjab, India 143005	2002-07	Department of Biotechnology
M.Sc.	Guru Nanak Dev University (GNDU) Amritsar, Punjab, India 143005	2000-2002	Zoology
B.Sc.	Himachal Pradesh University (HPU) Shimla, Himachal Pradesh, India	1997-2000	Zoology, Chemistry and Botany

Experiences:

Position Held	Place of Work	Start Date	End Date	Total Experience
Assistant Professor	Centre for Animal Sciences, School of Basic and Applied Sciences, Central University of Punjab, Bathinda, (CUPB) Punjab India	13-07-2015	Till date	
Assistant Professor	Department of Biotechnology, DAV University, Jalandhar, Punjab India	29-08-2014	10-07-2015	About 1 year
Postdoctoral Fellow/Research Scientist	Development and Plasticity of Postnatal, Brain Jean-Pierre Aubert Research Center, INSERM U837, place de Verdun 59045 Lille, Cedex France	08-01-2008	30-06-2014	6 Yr. & 6 Months

Teaching Assignments:

1. Teaching Responsibilities: (Course Title)

1. Animal Biotechnology
2. Industrial Biotechnology
3. Cell Biology
4. Endocrinology
5. Animal Tissue Culture
6. Animal Physiology
7. Evolution and Development Biology
8. Basics in Neuroscience

Professional Recognition /Awards/Scholarship:

Awards

2005	Travel award for attending the Indian Academy of Neuroscience to attend the XXII annual meeting in Jan 2005, Gwalior, India.
2006	Travel award to attend the Asian Pacific Society for Neurochemistry (APSN) for 7 th Biennial Meeting from July 2 nd to 5 th 2006, National University Singapore (NUS), Singapore.
2006	Travel award to attend the IBRO-Neuroscience Training School at National University Singapore, Singapore in June 2006.
2006	Travel award to attend the Japan Neuroscience Society (JNS) for the 29 th Annual Meeting from July 19 th to 21 st 2006, Kyoto, Japan.
2008	Won Best Presentation Award in International symposium on “Molecular Aspects of Brain Aging and Neurological Disorders” in November 2008 held at Department of Biotechnology, Guru Nanak Dev University, Amritsar, India.
2001-2002	Qualified National Eligibility Test for Lectureship in Life Sciences (CSIR-NET Dec. 2001& June 2002, conducted by Council for Scientific and Industrial Research, New Delhi, India)
2002	Qualified Graduate Aptitude Test for Engineering (GATE 2001).

Peer Recognition:

2014 - Till date	Editorial Board Member for International Journal of Biology, Pharmaceutical and Allied Sciences (IJBPAS)
2014 – Till date	Editorial Board Member for Journal of Virology and Biotechnology.

Area specializations/Research Interest:

These past years we have provided compelling evidence that cell-to-cell communication processes involving non neuronal cells, such as glial and endothelial cells, are important in regulating the secretory activity of those hypothalamic neurons that secrete gonadotropin releasing hormone (GnRH). GnRH is a neuropeptide essential for mammalian sexual development, acquisition of reproductive capacity at puberty, and adult reproductive function. Our studies unveiled that glial-neuronal interactions in the median eminence, the projection field of GnRH neurons, modulate the access of the GnRH nerve terminals to the pericapillary space during the estrous cycle. Notwithstanding the importance of these plastic rearrangements, genetic approaches revealed that glia-to-neuron signaling pathways involving neuregulins, transforming growth factors and their guidance cue (like Semaphorins) play an essential role in the control of GnRH release, and that the disruption of this communication system delays sexual maturation and impairs adult reproductive function. My research will focus on the recognition of these new regulatory components, and the integrative use of cellular, molecular, and genomic approaches, to unravel the basic cell-cell regulatory mechanisms controlling GnRH release within the median eminence.

In the second part of my research I would also like to evaluate how pathologies (such as obesity) may affect these neurobiological events and, conversely, how impairment of brain communication with the periphery renders the organism prone to develop pathologies (obesity, diabetes, precocious and/or delayed puberty and infertility). My research work is mainly focus to understand and elucidate the cellular and molecular mechanisms of tripartite synapse, which is classically associated with different forms of plasticity in adult brain using animal (rat and mice) as well as neuronal and glial cell lines as a model system.

- Hormone-dependent development and plasticity of the metabolic brain
- Role of semaphorins in brain development and neuro-glia plasticity

Publications:

S. No.	Title, volume, page number	IF
1)	Andrea Messina, Fanny Langlet, Konstantina Chachlaki, Juan Roa, S Rasika, Nathalie Jouy, Sarah Gallet, Francisco Gaytan, Jyoti Parkash , Manuel Tena-Sempere, Paolo Giacobini, Vincent Prevot 2016 MicroRNAs regulate production of hypothalamic GnRH before puberty. Accepted in in Nature Neuroscience .	16.09
2)	Irene Cimino, Filippo Casoni, Andrea Messina, Jyoti Parkash , Soazik P Jamin, Sophie Catteau-Jonard, Francis Collier, Marc Baroncini, Didier Dewailly, Pascal Pigny, Mel Prescott, Rebecca Campbell, Allan Herbison, Vincent Prévot, and Paolo Giacobini 2015: Novel Role for Anti-Müllerian Hormone in the Regulation of GnRH Neuron Excitability and Hormone Secretion. Nature Comm. 12; 7: 10055.	11.77
3)	Jyoti Parkash , Andrea Messina, Fanny Langlet, Irene Cimino, Anne Loyens, Sarah Gallet, Eglantine Balland, François Pralong, Jeroen Pasterkamp, Vincent Prevot, Paolo Giacobini 2015: Semaphorin 7A regulates neuro-glia plasticity of the adult hypothalamic median eminence Nature Comm. 6:6385.	11.77
4)	Paolo Giacobini*, Jyoti Parkash* , Celine Campagne*, Naresh Kumar Hanchate, Daniel	13.45

	Mazure, Vincent Prevot 2014: Brain Endothelial Cells Control Fertility through Ovarian-Steroid-Dependent Release of Semaphorin 3A. Plos Biology 12 (3), e1001808	
5)	Jyoti Parkash , Irene Cimino, Nicoletta Ferraris, Filippo Casoni, Susan Wray, Helene Cappy, Vincent Prevot, Paolo Giacobini 2012: Suppression of β 1- integrin in gonadotropin-releasing hormone cells disrupts migration and axonal extension resulting in severe reproductive alterations. Journal of Neuroscience 32(47): 16992-17002	7.13
6)	Gustav Collden, Eglantine Balland, Jyoti Parkash , Emilie Caron, Vincent Prevot, Sebastien G. Bouret 2014: Neonatal Overnutrition Causes Early Alterations in the Central Response to Peripheral Ghrelin Molecular Metabolism 24;4(1):15-24.	SNIP 1.16
7)	Hanchate NK*, Jyoti Parkash* , Nicole Bellefontaine, Danièle Mazur, William H. Colledge, Xavier d'Anglemont de Tassigny, Vincent Prevot 2012: Kisspeptin-GPR54 signaling in mouse NO-synthesizing neurons participates in the hypothalamic control of ovulation. Journal of Neuroscience 32(3): 932-945	7.13
8)	Nicole Bellefontaine, konstantina chachlaki, Jyoti Parkash , Charlotte Vanacker, William Colledge, Xavier d'Anglemont de Tassigny, Sebastien Bouret and Vincent Prevot 2014: Leptin facilitates reproduction through neuronal nitric oxide signaling in the hypothalamic preoptic region in mice. Journal of Clinical investigation doi:10.1172/JCI65928	13.21
9)	Naresh Kumar Hanchate, Paolo Giacobini, Pierre Lhuillier, Jyoti Parkash , Cécile Espy, Corinne Fouveaut, Chrystel Leroy, Stéphanie Baron, Céline Campagne, Francis Collier, Alfons Garcia-Pineiro, Didier Dewailly, Christine Cortet-Rudelli, Ksenija Gersak, Michel Pugeat, Jacques Young, Jean-Pierre Hardelin, Vincent Prevot and Catherine Dodé 2012: SEMA3A, a Gene Involved in Axonal Pathfinding, Is Mutated in Patients with Kallmann Syndrome. PLoS Genetics 8(8):e1002896	9.13
10)	Jyoti Parkash and Gurcharan Kaur 2007: Transcriptional Regulation of PSA-NCAM Mediated Neuron-glia Plasticity in the Adult Hypothalamus. Neuron Glia Biology 3: 299-307	6.64
11)	Jyoti Parkash , , Xavier d'Anglemont de Tassigny, Nicole Bellefontaine, Celine Campagne, Danièle Mazure, Valérie Buée-Scherrer, and Vincent Prevot 2010: Phosphorylation of N-methyl-D-aspartic acid receptor-associated neuronal nitric oxide synthase depends on estrogens and modulates hypothalamic nitric oxide production during the ovarian cycle. Endocrinology 151: 2723 – 2735	4.75.
12)	Sushil Kumar*, Jyoti Parkash* , Herdeep Kumar and Gurcharan Kaur 2009: Interactive effect of excitotoxic injury and dietary restriction on neurogenesis and neurotrophic factors in adult male rat brain. Neuroscience Research 65(4): 367-374	2.37
13)	Jyoti Parkash and Gurcharan Kaur 2007: Potential of PSA-NCAM in neuron-glia plasticity in the adult hypothalamus: Role of noradrenergic and GABAergic neurotransmitters. Brain Research Bulletin 74(5): 317-328	2.77
14)	Jyoti Parkash and Gurcharan Kaur 2005: Neuronal-Glia Plasticity in the GnRH Release in Adult Female Rats: Role of Polysialylated Form of Neural Cell Adhesion Molecule. Journal of Endocrinology 186: 397-409	4.05
15)	Sushil Kumar, Jyoti Parkash , Herdeep Kumar and Gurcharan Kaur 2012: Enzymatic removal of polysialic acid from neural cell adhesion molecule interrupts gonadotropin releasing hormone (GnRH) neuron-glia remodeling. Molecular and Cellular Endocrinology 348(1): 95-103	4.09
16)	Víctor Briz, Jyoti Parkash , Sara Sánchez-Redondo, Vincent Prevot, Cristina Suñol 2012: Allopregnanolone Prevents Dieldrin-induced NMDA Receptor Internalization and	4.75

	Neurotoxicity in Cortical Neurons by Preserving GABA _a Receptor Functionality. Endocrinology 153(2): 847-60	
17)	Jyoti Parkash and Gurcharan Kaur 2010: Steroid Hormones Regulate Post-Translational Modification of Neural Cell Adhesion Molecule: Implication For The Neuroendocrine Control of GnRH. Journal of Neurological Sciences 27(2): 197-213	.13
	Review Articles	
18)	Nicole Bellefontaine, Naresh Kumar Hanchate, Jyoti Parkash , Celine Campagne, Sandrine de Seranno, Jérôme Clasadonte, Xavier d'Anglemont de Tassigny, Vincent Prevot 2011: Nitric oxide as key mediator of neuron-to-neuron and endothelia-to-glia communication involved in the neuroendocrine control of reproduction. Neuroendocrinology 93: 74-89	3.27
19)	Vincent Prevot, Bellefontaine N, Marc Beronni, Arian Shrif, Naresh Kumar Hanchate, Jyoti Parkash , Celine Campagne, Sandrine de Seranno 2010: GnRH nerve terminals, tanycytes and neurohaemal junction remodeling in the adult median eminence: functional consequences for reproduction and dynamic role of vascular endothelial cells. Journal of Neuroendocrinology 22 (7): 639-649	4.67
20)	Vincent Prevot, Naresh Kumar Hanchate, Arian Shrif, Jyoti Parkash , Cecilia Estrella, Cécile Allet, Celine Campagne, Sandrine de Seranno, Xavier d'Anglemont de Tassigny, Marc Beronni 2010: Function-related structural plasticity of the GnRH system A role for neuronal–glial–endothelial interactions Structural plasticity in GnRH system. Frontier in Neuroendocrinology 31 (3): 241-258.	12.06
#	Front cover of Journal Frontier of Neuroendocrinology: Schematic representation of endothelial–glial interactions involved in the control of GnRH neurosecretion in the median eminence. Volume 31, 2010.	
	<p style="text-align: center;">* Contributed equally in above publications Cumulative Impact Factor: 137.32 Total Citations 405 H index 12 and i10 Index 13 http://www.ncbi.nlm.nih.gov/gate2.inist.fr/pubmed/?term=parkash+jyoti https://www.researchgate.net/profile/Jyoti_Parkash/publications</p>	

Workshop/Conferences:

Workshops: Attended:

1. Attended National Workshop on the Art and Science of Scholarly Communication: Writing Better Research Papers organized by DAV University on 14th March 2015.
2. Attended IBRO-Neuroscience Training School at National University Singapore, Singapore in June 2006.
3. Attended workshop on “Tools for Bio-informatics Sub-center, Department of Biotechnology, Guru Nanak Dev University, Amritsar from 3rd - 4th March, 2005.

Conference Organized:

1. Member of Organizing, Scientific and Cultural committees in National Organized conference by DAV university "Emerging Trends in Host Microbe Interactions" held on April 17th-18th, 2015.

Conferences Attended:

Oral Presentations/Poster Presentations Awards:

1. Oral présentation entitled "Semaphorins regulate neuro-glia plasticity in the adult hypothalamic median eminence conference organised by DAV university, Emerging trends of Host-Microbe interactions on 17-18th April 2015.
2. Invited source person in a workshop (organised by Doaba College, Jalandhar) under DBT Star College Scheme Support (Ministry of Science & Technology) entitled 'Fundamentals of animal tissue culture and its applications' held on 18th March 2015.
3. Won Best Presentation Award in International symposium on "Molecular Aspects of Brain Aging and Neurological Disorders" in November 2008 held at Department of Biotechnology, Guru Nanak Dev University, Amritsar, India.

Poster Presentations:

1. **J. Parkash**, A. Loyens, S. Gallet, E. Balland, F. Pralong, J. Pastercamp, V. Prevot, P. Giacobini 2011 Semaphorin 7A expression in tanycytes is regulated by sex-steroid hormones and controls gonadotropin-releasing hormone-1 (GnRH-1) cell plasticity. *41st Annual Meeting of Neuroscience (SFN), November 2011, Washington DC, USA.*
2. **J. Parkash**, A. Loyens, S. Gallet, E. Balland, F. Pralong, J. Pastercamp, V. Prevot, P. Giacobini Sema7A is a Tanycytic-Secreted Guidance Molecule and Regulates GnRH Axon Outgrowth in the Adult Brain. *14th LARC Neuroscience meeting, October 2010, Lille.*
3. **J. Parkash**, D'Anglemont De Tassigny X, Bellefontaine N, Campagne C, Mazure D, Buée-Scherrer V and Prévot V 2010 Phosphorylation of NMDAR associated nNOS modulates hypothalamic nitric oxide production: The role of estrogen during ovarian cycle in female rats. *7th international congress of Neuroendocrinology from 7th - 11th July, Rouen, France P2-182.*
4. **J. Parkash**, D'Anglemont De Tassigny X, Bellefontaine N, Campagne C, Mazure D, Buée-Scherrer V and Prévot V 2010 Phosphorylation of N-methyl-D-aspartic acid receptor-associated neuronal nitric oxide synthase modulates hypothalamic nitric oxide production: The role of estrogen during ovarian cycle in female rats; *36th Colloque De la societie de neuroendocrinologie international congress from 15th - 18th September, 2009, Nice, France.*

5. **J. Parkash** and Kaur G Potential of PSA-NCAM to Mediate Neuronal-glia interaction in GnRH Neurosecretion: Role of GABAergic and noradrenergic neurotransmitters; 29th Annual Japan Neuroscience Society (JNS) Kyoto from 19th - 21st July (Neuroscience Research, 2006).
6. **J. Parkash** and Kaur G Activity dependent neuronal-glia remodeling in the ME of adult rat hypothalamus: Role of GABAergic and noradrenergic neurotransmitters; 7th Biennial Asian Pacific Society for Neurochemistry (APSN 2006) Singapore from 2nd - 5th July (Journal of Neurochemistry 98 (1): 71, 2006)
7. **J. Parkash**, A. Loyens, S. Gallet, E. Balland, F. Pralong, J. Pastercamp, V. Prevot, P. Giacobini Sema7A is a tancytic-Secreted Guidance Cue Regulates GnRH Axon plasticity in adult Brain. 30th Annual meeting of Indian Academy of Neurosciences. 27th-30th Oct. 2012 Amritsar India.
8. P. Giacobini, **J. Parkash**, F. Langlet, A. Messina, A. Loyens, D. Leroy, S. Gallet, E. Balland, F. Pralong, G. Cagnoni, L. Tamagnone, M. Mazzone, R. Pasterkamp, V. Prevot 2013 Semaphorin7a signaling in periodical neuro-glia plasticity of the hypothalamic median eminence that underlies reproduction. *Annual Meeting of Neuroscience (SFN), November 2013, San-Diego California USA.*
9. N. Bellefontaine, E. Caron, **J. Parkash**, C. Vanacker, S. G. Bouret, V. Prevot Neuronal nitric oxide synthase activity is necessary for diet-induced obesity. *Annual Meeting of Neuroscience (SFN), November 2013, San-Diego California.*
10. I. Cimino, F. Casoni, A. Messina, **J. Parkash**, A. Loyens, S. Jamin, N. Di Clemente, D. Dewailly, V. Prevot, P. Giacobini Extra-ovarian effects of anti-müllerian hormone on the gonadotropin-releasing hormone (gnrh) neurons. *Annual Meeting of Neuroscience (SFN), November 2013, San-Diego California.*
11. Andrea Messina*, Langlet Fanny, Chlachaki Konstantina, Roa Juan, Gallet Sarah, **Jyoti Parkash**, Manuel Tena-Sempere, Paolo Giacobini and Vincent Prevot 2015: MicroRNAs flip the switch for the production of hypothalamic GnRH before puberty. 40th Colloque De la societie de neuroendocrinologie international congress from 23rd - 25th September, 2015, Lille, France.
12. V. Briz · M. Galofré, **J. Parkash**, V. Prevot, C. Suñol 2010: Estradiol counteracts NMDAR internalization induced by long-term exposure to dieldrin in cortical neurons. XII International Congress of Toxicology 19th -23th July 2010, Barcelona-Spain. Toxicology Letters. Volume 196, Supplement, Pages S1-S352 (17 July 2010).
13. Sushil Kumar, **Jyoti Parkash**, Dinesh Lakhanpal and Gurcharan Kaur : Interactive effect of excitotoxicity injury and dietary restriction on neurogenesis and neurotrophic factors in adult male rat brain; International symposium on “Molecular Aspects of Brain Aging and Neurological Disorders” at

Department of Biotechnology, Guru Nanak Dev University Amritsar from 28th - 29th November, 2008.

14. H. N. Kumar, J. Parkash, D Mazur, W.H Colledge, X.D'Angleomont De Tessigny, V, Prevot 2011 Nitric oxide synthesizing neurons: important mediators of Kisspeptin- GnRH neuron interactions during the estrous cycle. 41st Annual Meeting of Neuroscience (SFN), November 12th-16th 2011, Washington DC, USA.

Grants:

Sr. No.	Sanction to	Title	Funding Agency	Period from.....to	Amount sanctioned
1.	Dr. Jyoti Parkash	Role for Semaphorins and its Receptors in the Control of Sexual Brain Development and Adult Brain Plasticity	UGC	2015-2018	About 10 Lakhs
2.	Dr. Jyoti Parkash	Neural-glia-endothelial tripartite interactions: Unravel the basic cell-cell regulatory Mechanisms involved in the central control of reproduction.	SERB, DST India	2016-2019	About 50 Lakhs
3.	Dr. Jyoti Parkash	Leptin, puberty and obesity: a major role for hypothalamic nitric-oxide synthesizing neurons?	CEFIPRA/IFC PAR	Submitted	1 crore 16 lakhs

Student achievements:

1. Ankur Jairath my PhD student has been selected under French Eiffel Fellowship Program for pursuing 10 months research in French Lab.

Collaborations:

- 1. Prof. Gurcharan Kaur**
Department of Biotechnology,
Guru Nanak Dev University,
Amritsar-143005, India.
Ph: 91-183-2258802-9 Ext. 3176
FAX: 91-183-2258272 and 2258820
E-mail: kgurcharan.neuro@yahoo.com

- 2. Dr. Vincent PREVOT (Director)**
Development and Plasticity of the Neuroendocrine Brain
Neurobese Interantional Associated Laboratory
Jean-Pierre Aubert Research Center, Inserm U1172
University of Lille, Bâtiment Biserte, 1 place de Verdun
59045 Lille cedex, France
Tel: [+33 3-20-62-20-64](tel:+33320622064)
Fax: [+33 3-20-53-85-62](tel:+33320538562)
E-mail: vincent.prevot@inserm.fr

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