Charu Gupta Kumar
3414G, 1206 W. Gregory Drive, Urbana, IL 61801
cgkumar@illinois.edu

PERSONAL

U.S. Citizen; settled in Urbana/Champaign since 1995.

EDUCATION

- **Ph.D. Animal Sciences**, University of Illinois at Urbana-Champaign; Graduated December 2008; Advisor: Harris A. Lewin, PhD. <u>Thesis title</u>: *Novel lineage-specific genes expressed in cattle placenta: discovery, functional annotation and evolution.*

- **M.S. Biochemistry**, University of Minnesota, Minneapolis/St.Paul, MN, 1993. Advisor: Michael A. Raftery, PhD. <u>Thesis title</u>: *Topographic images of metal mercaptide derivatives of alpha-Bungarotoxin, a nicotinic Acetylcholine receptor antagonist, using Scanning Tunneling Microscopy.*

- **M.Phil. Chemistry**, University of Delhi, India, 1990; Advisor: A.N. Maitra, PhD. <u>Thesis title</u>: *Studies of lecithin gels in biocompatible oils.*

- **M.Sc. Chemistry**, Indian Institute of Technology, Kanpur, India, 1988; Advisor: P.Gupta-Bhaiya, PhD. <u>Thesis title</u>: *Study of Cardiolipin bilayer lipid membrane*

- **B.Sc. Chemistry**, St. Stephen's College, University of Delhi, Delhi, India, 1986

TRAINING IN BIOINFORMATICS

- Object-oriented programming certification, Computer Science, Parkland College, Champaign, IL. 1997-1999.
- *Bioinformatics tools for comparative genomics*, Berkeley, CA, November 4—8, 2002

WORK AND RESEARCH EXPERIENCE

- **Postdoctoral Research Associate, Institute for Genomic Biology, UIUC, IL,** 2010 – present

- **Affiliate Research Associate, Institute for Genomic Biology, UIUC, IL,** 2009 – 2010

- **Graduate Research Assistant, Animal Sciences,** UIUC, IL, 2001 – 2008
Training in bioinformatics, systems biology, and genomics to identify and characterize functions and evolution of novel genes from cattle placenta that are specific to the cetartiodactyl lineage.

- **Program Analyst, Bioinformatics,** W. M. Keck Center, UIUC, IL, 1999 – 2001
Developed many of the resources in the EST Information Management and Annotation tool (ESTIMA), such as the EST processing pipeline, a custom Gene Ontology Browser that allows users to search and retrieve the Consortium's annotated term hierarchy, and other search tools. Processed and analyzed EST sequences from cattle, honeybee brain, and other cDNA libraries.

- **Part-time Faculty in Chemistry**, Parkland College, Champaign, IL, 1997
Taught Chem101. Duties involved instruction, grading, and conducting the lab.

- **Teaching Assistant**, University of Minnesota at Minneapolis/St.Paul, 1990-1993
Taught Biochemistry laboratory course, which involved instruction, grading, and conducting the lab.

HONORS

- *Gamma Sigma Delta*, The Honor Society of Agriculture, UIUC chapter, IL

- Graduate research assistantship, Department of Animal Sciences, UIUC, 2001-2008

- Parkland College Dean's List in Computer Science, Champaign, IL 1999

PEER-REVIEWED PUBLICATIONS

- <u>Kumar CG</u>, Everts RE, Loor JJ, Lewin HA. Functional inference of lineage-specific transcripts from cattle placenta using co-expression analysis, ***BMC Genomics***, 2010, 11:161.

- Cattle genome consortium, coauthor, gene annotation. The Genome Sequence of Taurine Cattle: A window to ruminant biology and evolution. ***Science***, 2009 Apr 24;324(5926):522-8.

- <u>Kumar CG</u>, Lewin HA. Phylogenetic profiles of novel lineage-specific genes (In preparation).

- <u>Kumar CG</u>, Larson JH, Band MR, Lewin HA. Discovery and characterization of 91 novel transcripts expressed in cattle placenta. ***BMC Genomics***. 2007 May 9; 8:113.

- Larson JH, <u>Kumar CG</u>, Everts RE, Green CA, Everts-van der Wind A, Band MR, Lewin HA. Discovery of eight novel divergent homologs expressed in cattle placenta. ***Physiol Genomics*** 2006 May 16;25(3):405-13.

- <u>Kumar CG</u>, LeDuc R, Gong G, Roinishivili L, Lewin HA, Liu L. ESTIMA, a Tool for EST Management in a Multi-Project Environment. ***BMC Bioinformatics*** 2004 Nov 4;5(1):176.

- Everts RE, Band MR, Liu ZL, <u>Kumar CG</u>, Liu L, Loor JJ, Oliveira R, Lewin HA. A 7872 cDNA microarray and its use in bovine functional genomics. ***Vet Immunol Immunopathol***. 2005 May 15;105(3-4):235-45.

- Lewin HA, Larson, JH and <u>Kumar CG</u>. Comparative Mammalian Genomics and Adaptive Evolution: Divergent Homologs and Novel Genes in the Cattle Genome. *In: S.P. Wasser (ed.) Evolutionary Theory and Processes: Modern Horizons, Papers in Honor of Eviator Nevo, 2003*. Kluwer Academic Publishers, The Netherlands.

- Whitfield CW, Band MR, Bonaldo MF, <u>Kumar CG</u>, Liu L, Pardinas JR, Robertson HM, Soares MB, Robinson GE. Annotated expressed sequence tags and cDNA microarrays for studies of brain and behavior in the honey bee. ***Genome Res***. 2002 Apr;12(4):555-66.

CONFERENCE PUBLICATIONS

Lei Liu, Levan Roinishvili, Xiaokang Pan, Zhifang Liu, and Charu Gupta Kumar. GPMS: A Web-based Genome Project Management System. *Proceedings of World Multiconference on Systemics, Cybernetics and Informatics,* Vol.XII, July 23-26 2000, Orlando, Florida.

CONFERENCE PRESENTATIONS

- <u>Kumar CG</u>, Everts RE, Larson JH, Loor JJ, Band MR, Lewin HA. Novel lineage-specific genes expressed in cattle placenta: discovery, functional annotation and evolution. *The bovine genome consortium.* Cold Spring Harbor Laboratory/Wellcome Trust conference, May 9-11 2009, Cold Spring Harbor, New York. Talk and poster.

- Kumar CG, Larson JH, Band MR, and Lewin HA. Identification and bioinformatics characterization of novel mammalian transcripts expressed in bovine placenta. Fifth Cold Spring Harbor Laboratory/Wellcome Trust conference on *Genome Informatics*, October 28-November 1 2005, Cold Spring Harbor, New York,

- Kumar C.G., Larson J.H., Band M.R., and Lewin H.A. Identification and bioinformatic characterization of novel mammalian genes expressed in bovine placenta. *7th Annual Conference in Computational Genomics,* Reston, Virginia, October 21-24, 2004.

- Kumar C.G., S.S. Davis, G. Gong, S. Natarajan, H.A. Lewin, L. Liu, ESTIMA: An EST Information Management And Annotation Tool, Computer-demo and poster presented at *Plant, Animal & Microbe Genomes X*, San Diego, California, January 12--16, 2002

WORKSHOPS AND MEETINGS FOR TRAINING IN NEURO-GENOMICS
- *Databasing the brain*, EU-US workshop, Oslo, Norway, July 1—2, 2001
- Joint CSHL/Welcome Trust conference on *Integrated approaches to Brain complexity*, Hinxton, Cambridge UK, September 28—30, 2006

SCIENTIFIC JOURNAL MEMBERSHIP
- AAAS

ARTICLES REVIEWED FOR SCIENTIFIC JOURNALS
- *BMC Genomics*