




Faculty Details proforma for DU Web-site

(PLEASE FILL THIS IN AND Email it to websiteDU@du.ac.in and
cc: director@ducc.du.ac.in)

Title	Dr.	First Name	Mallikarjun	Last Name	Shakarad	Photograph
Designation		Professor				
Address		Room No. 205 Department of Zoology University of Delhi North Campus Delhi-110007				
Phone No Office		+91-11-27667443 Extn: 217				
Residence						
Mobile						
Email		mallik@zoology.du.ac.in				
Web-Page						
Educational Qualifications						
Degree		Institution		Year		
Ph.D.		Indian Institute of Science, Bangalore, Karnataka, India			1995	
M.Phil. / M.Tech.						
PG		University of Agricultural Sciences, GKVK, Bangalore, Karnataka, India			1989	
UG		University of Agricultural Sciences, Dharwad, Karnataka, India			1987	
Any other qualification						
Career Profile						
<p>Professor, Department of Zoology, University of Delhi, Delhi, India, February 2015- present.</p> <p>Associate Professor, Department of Zoology, University of Delhi, Delhi, India, February 2009- January 2015.</p> <p>Assistant Professor, School of Life Sciences, Jawaharlal Nehru University, New Delhi, India, October 2006- January 2009.</p> <p>Faculty Fellow, Department of Biology, Poornaprajna Institute of Scientific Research, Bangalore, India, September 2002- September 2006.</p> <p>Visitor, Department of Biology, University of Regensburg, Germany, September- November 2001.</p> <p>Research Scientist, Poornaprajna Institute of Scientific Research, Bangalore, India, September 2000- August 2002.</p> <p>Research Associate, Evolutionary and Organismal biology Unit, Jawaharlal Nehru Centre For Advanced Scientific Research, Jakkur, Bangalore, India, May 1999- August 2000.</p> <p>Visitor, Department of Ecology, Evolution and Behavior, University of Minnesota, USA, Aug. 1998-Feb. 1999.</p> <p>Assistant Professor, Department of Genetics and Plant Breeding, College of Agriculture, University of Agricultural Sciences, Dharwad, India, 1996-1998.</p> <p>Research Associate, Biology Department, Chinese University of Hong Kong, Hong Kong, Nov. 1995- Jul.1996.</p>						

Teaching Assistant, Centre for Ecological Sciences, Indian Institute of Science, Bangalore, India, 1992.														
Teaching Assistant, Dept. of Genetics and Plant Breeding, University of Agricultural Sciences, Bangalore, India, 1987-1989.														
Administrative Assignments														
Member- Governing Body, Lady Hardinge Medical College, New Delhi, India, February 2018- present. Member- Advisory Committee, Clarette Biotech, Mysore, India, December 2017- present. Member- Courses Committee, Department of Zoology, University of Delhi, Delhi, India, January 2016 - present. Member- Purchase Committee, Department of Zoology, University of Delhi, Delhi, India, January 2016 - present. Member- M. Phil. Committee, Department of Zoology, University of Delhi, Delhi, India, January 2016 - present. Member- Physical stock verification Committee, Department of Zoology, University of Delhi, Delhi, India, January 2012 – December 2015. Member- Contingency and Stationary Committee, Department of Zoology, University of Delhi, Delhi, India, January 2012 – December 2014. Convener- Academic Committee, Department of Zoology, University of Delhi, Delhi, India, January 2014 – December 2015. Convener- Museum Committee, Department of Zoology, University of Delhi, Delhi, India, January 2014 – December 2015. Deputy Superintendent of Examinations- Department of Zoology, University of Delhi, Delhi, India, January 2014 – December 2015.														
Areas of Interest / Specialization														
Evolutionary Genetics, Population Genetics, Behavioural Genetics, Behavioral Ecology and Sociobiology, and Biodiversity.														
Subjects Taught														
ZOOL 202- Systematics, Biodiversity and Evolution ZOOL 302- Computational Biology, Biostatistics and Bioinformatics ZOOL 307- Animal Behaviour ZOOL 4101- Insect Diversity, Society and Evolution														
Research Guidance														
<i>List against each head (If applicable)</i>														
<table> <tr> <td>1. Supervision of awarded Doctoral Thesis:</td> <td>5</td> </tr> <tr> <td>2. Supervision of Doctoral Thesis submitted:</td> <td>4</td> </tr> <tr> <td>3. Supervision of Doctoral Thesis, under progress:</td> <td>2</td> </tr> <tr> <td>4. Supervision of awarded M.Phil dissertations :</td> <td>2</td> </tr> <tr> <td>5. Supervision of M.Phil dissertations, under progress:</td> <td>Nil</td> </tr> <tr> <td>6. Supervision of M.Sc dissertations, completed:</td> <td>30</td> </tr> <tr> <td>7. Supervision of M.Sc dissertations, under progress:</td> <td>Nil</td> </tr> </table>	1. Supervision of awarded Doctoral Thesis:	5	2. Supervision of Doctoral Thesis submitted:	4	3. Supervision of Doctoral Thesis, under progress:	2	4. Supervision of awarded M.Phil dissertations :	2	5. Supervision of M.Phil dissertations, under progress:	Nil	6. Supervision of M.Sc dissertations, completed:	30	7. Supervision of M.Sc dissertations, under progress:	Nil
1. Supervision of awarded Doctoral Thesis:	5													
2. Supervision of Doctoral Thesis submitted:	4													
3. Supervision of Doctoral Thesis, under progress:	2													
4. Supervision of awarded M.Phil dissertations :	2													
5. Supervision of M.Phil dissertations, under progress:	Nil													
6. Supervision of M.Sc dissertations, completed:	30													
7. Supervision of M.Sc dissertations, under progress:	Nil													
Publications Profile														
<i>List against each head(If applicable) (as Illustrated with examples)</i>														
<table> <tr> <td>1. Books/Monographs (Authored/Edited) :</td> <td>Nil</td> </tr> <tr> <td>2. Research papers published in Refereed/Peer Reviewed Journals</td> <td></td> </tr> </table> <p>Chhabra, H., Mishra N. and Shakarad, M. 2017. White eye mutation in <i>Drosophila melanogaster</i> does not affect fitness – a support for a neutral theory of molecular evolution. <i>Dros. Inf. Serv.</i> 100: 105-112.</p> <p>Hira, P., Sood, U., Gupta, V., Nayyar, N., Mahato, N.K., Singh, Y., Lal, R. and Shakarad, M., 2017. Human Microbiome: Implications on Health and Disease. In <i>Genome Analysis and Human Health</i> (pp. 153-168). Springer Singapore.</p> <p>Sood, U., Singh, Y., Shakarad, M. and Lal, R., 2017. Highlight on Engineering <i>Mycobacterium smegmatis</i> for testosterone production. <i>Microbial biotechnology</i>, 10(1), pp.73-75.</p> <p>Kumar R., Verma H., Haider S., Bajaj, A., Sood U., Ponnusamy K., Nagar S., Shakarad M., Negi RK., Singh Y., Khurana JP., Gilbert JA and Lal R. 2017. Comparative genomic analysis reveals habitat-specific genes and reulogatory hubs within the genus <i>Novosphingobium</i>. <i>mSystems</i>, 2(3), pp.e00020-17.</p>	1. Books/Monographs (Authored/Edited) :	Nil	2. Research papers published in Refereed/Peer Reviewed Journals											
1. Books/Monographs (Authored/Edited) :	Nil													
2. Research papers published in Refereed/Peer Reviewed Journals														

Aditi K., Shakarad M. and Aggrawal N. 2016. Altered lipid metabolism in *Drosophila* model of Huntington's disease. *Scientific Reports*. doi: 10.1038/srep31411

Mishra N. and Shakarad, M. 2016. Effects of parental age and substrate quality on pre-adult fitness of progeny. *Imperial Journal of Interdisciplinary Research*. 2 (8):

Raina H. S., Rawal V., Singh S., Daimei G., Shakarad M. and Raman R. 2015. Elimination of *Arsenophonus* and decrease in the bacterial symbionts diversity by antibiotic treatment leads to increase in fitness of whitefly, *Bemisia tabaci*. *Infection, Genetics and Evolution*. 32:224-230. doi: 10.1016/j.meegid.2015.03.022. (Impact Factor: 3.264)

Chandrashekara K. T. and Shakarad, M. 2014. Effect of dietary Aloe vera extract fed at larval stage on life-history traits of *Drosophila melanogaster* selected for faster pre-adult development. *Global Journal of Biological and Biomedical Research*, 2(2):110-116.

Chandrashekara K. T., Popli S. and Shakarad, M. 2014. Curcumin enhances parental reproductive lifespan and progeny viability in *Drosophila melanogaster*. *Age* 36(5):1-14, doi 10.1007/s11357-014-9702-8. , Impact Factor: 3.39

Handa J., Chandrashekara K. T., Kashyap K., Sageena G. and Shakarad M. 2014. Gender based disruptive selection maintains body size polymorphism in *Drosophila melanogaster*. *Journal of Biosciences*, 39(4): 609-620, doi 10.1007/s12038-014-9452-x.

Sageena G., Choudhary S., Mishra N., Roshan R. and Shakarad M. 2014. Role of environment on larval growth in *Drosophila melanogaster*. *International Journal of Applied Engineering Research*, 9(9): 1029-1032.

Choudhary S., Sageena G. and Shakarad M. 2014. Hymenopteran venom: a blessing in disguise. *International Journal of Applied Engineering Research*, 9(9): 1111-1118.

Sageena G., Choudhary S., Mishra N., Roshan R. and Shakarad M. 2014. Role of Juvenile environment in pre-adult development and adult metabolites in *Drosophila melanogaster*. *International Journal of Environmental Research and Development*, 4(4): 361-370.

Sageena G., Mishra N., Roshan R., Choudhary S. and Shakarad M. 2014. Standardization of LD-50: Toxicity study using paraquat dichloride in *Drosophila melanogaster* for various life history traits. *Global Sustainability Transitions: Impacts and Innovations (ISBN: 978-93-83083-77-0)*, 74-77.

Sageena G., Choudhary S. and Shakarad M. 2014. Role of oxidative stress biology in evolution of life history traits in *Drosophila melanogaster*. *Global Sustainability Transitions: Impacts and Innovations (ISBN: 978-93-83083-77-0)*, 78-82.

Choudhary S., Sageena G. and Shakarad M. 2014. *Polistes olivaceus*: A potential biocontrol agent. *Global Sustainability Transitions: Impacts and Innovations (ISBN: 978-93-83083-77-0)*, 197-201.

Choudhary S., Sageena G. and Shakarad M. 2014. Interplay of nutrition and environment: a major factor behind social evolution in insects. *Global Sustainability Transitions: Impacts and Innovations (ISBN: 978-93-83083-77-0)*, 202-208.

Chandrashekara K. T. and Shakarad M. 2011. Aloe vera or resveratrol supplementation in larval diet delays adult aging in the fruit fly, *Drosophila melanogaster*. *Journal of Gerontology*. 66A(9): 965-971. doi:10.1093/gerona/glr103, Impact Factor: 5.416

Shakarad M. 2009. Experimental evidence for cooperation, an important process in evolution of complex systems. *Indian Journal of Microbiology*, 49: 295-296. Impact Factor: 0.457

Ghosh Modak S., Satish K. M., Mohan J., Dey S., Raghavendra N., Shakarad M. and Joshi A. 2009. A possible tradeoff between developmental rate and pathogen resistance in *Drosophila melanogaster*. *Journal of Genetics*, 88: 253-256. Impact Factor: 0.876

Dey S., Prasad N. G., Shakarad M. and Joshi A. 2008. Laboratory evolution of population stability in *Drosophila*: constancy and persistence do not necessarily coevolve. *Journal of Animal Ecology*, doi: 10.1111/j.1365-

2656.2008.01401.x, Impact Factor: 4.841

Rajamani M., Raghavendra N., Prasad N. G., Archana N., Joshi A. and Shakarad M. 2006. Reduced larval feeding rate is a strong evolutionary correlate of rapid development in *Drosophila melanogaster*. *Journal of Genetics*, 85: 209-212. Impact Factor: 0.876

Shakarad M., Prasad N. G., Gokhale K., Gadagkar V., Rajamani M. and Joshi A. 2005. Faster development does not lead to correlated evolution of greater pre-adult competitive ability in *Drosophila melanogaster*. *The Royal Society Proceedings: Biological Sciences (Biology Letters)*, 1: 91-94. doi: 10.1098/2004.0261, Impact Factor: 3.348

Prasad N. G. and Shakarad M. 2004. Genetic correlations: transient truths of adaptive evolution. *Journal of Genetics*, 83: 3-6. Impact Factor: 0.876

Sharmila Bharathi, N., Prasad, N. G., Shakarad, M., and Joshi, A. 2004. Correlates of sexual dimorphism for dry weight and development time in five species of *Drosophila*. *Journal of Zoology*, 264: 87-95. Impact Factor: 2.043

Prasad, N. G., Shakarad, M., Rajamani, M. and Joshi, A. 2003. Interaction between the effects of maternal and larval nutritional levels on pre-adult survival in *Drosophila melanogaster*. *Evolutionary Ecology Research*, 5: 903-911. Impact Factor: 1.03

Prasad, N. G., Sutirth Dey, Shakarad, M. and Joshi, A. 2003. The evolution of population stability as a by-product of life history evolution. *The Royal Society Proceedings: Biological Sciences (Biology Letters)*, DOI 10.1098/rsbl.2003.0020. *Proc. R. Soc. Lond. B (Suppl)*: 270, S84-S86., Impact Factor: 3.348

Sharmila Bharathi N., Prasad N. G., Shakarad M., and Joshi A. 2003. Variation in adult life-history and stress resistance across five species of *Drosophila*. *Journal of Genetics*, 82: 191-205. Impact Factor: 0.876

Joshi A., Prasad N. G. and Shakarad M. 2001. *K*-selection, *a* -selection, effectiveness, and tolerance in competition: density-dependent selection revisited. *Journal of Genetics*, 80: 63-75. Impact Factor: 0.876

Prasad N. G., Shakarad M., Anitha D., Rajamani M. & Joshi A. 2001. Correlated responses to selection on faster development and early reproduction in *Drosophila*: the evolution of larval traits. *Evolution*, 55: 1363-1372. Impact Factor: 4.864

Shakarad M., Prasad N. G., Rajamani M. & Joshi A. 2001. Evolution of faster development does not lead to greater fluctuating asymmetry of sternopleural bristle number in *Drosophila*. *Journal of Genetics*, 80: 1-7. Impact Factor: 0.876

Prasad N. G., Shakarad M., Gohil V. M., Sheeba V., Rajamani M. & Joshi A. 2000. Evolution of reduced pre-adult viability and larval growth rate in laboratory populations of *Drosophila melanogaster* selected for shorter development time. *Genetical Research*, 76: 249-259. Impact Factor: 2.0

Arathi H.S., Shakarad M. and Gadagkar R. 1997. Factors affecting the acceptance of alien conspecifics on nests of the primitively eusocial wasp, *Ropalidia marginata*. *Journal of Insect Behaviour*, 10: 343-353. Impact Factor: 1.293

Arathi H.S., Shakarad M. and Gadagkar R. 1997. Social organization on experimentally assembled colonies of the primitively eusocial wasp, *Ropalidia marginata*: comparison of introduced and natal wasps. *Insectes Sociaux*, 44: 139-146. Impact Factor: 1.331

Crosland M. W. J., Lok C. M., Wong T. C., Shakarad M. and Traniello J. F. A. 1997. Division of labour in a lower termite: most tasks performed by older workers. *Animal Behaviour*, 54: 999-1012. Impact Factor: 3.068

Shakarad M. and Gadagkar R. 1997. Do social wasps choose nesting strategies based on their brood rearing abilities? *Naturwissenschaften*, 84: 79-82. Impact Factor: 2.144

Shakarad M. and Gadagkar R. 1996. Why are there multiple-foundress colonies in *Ropalidia marginata*? In: Readings in Animal Behaviour. (eds.) Ramamurthi, R. and Geetha Bali, New Age International Limited, New Delhi, pp. 145-152.

Shakarad M. and Gadagkar R. 1995. Colony founding in a primitively eusocial wasp, *Ropalidia marginata*. *Ecological Entomology*, 20: 273-282. Impact Factor: 1.954

Shakarad M., Arathi H. S., Gangappa E. and Ramesh S. 1995. Gene action for yield and yield attributes in cowpea (*Vigna unguiculata* (L.) Walp). *Mysore Journal of Agricultural Sciences*, 29: 289-292.

Shakarad M., Veerappa K. B. and Arathi H. S. 1993. Path analysis and correlation studies in cowpea (*Vigna unguiculata* (L.) Walp). *Mysore Journal of Agricultural Sciences*, 27: 322-326.

Shakarad M., Arathi H. S., Gangappa E. and Ramesh S. 1993. Combining ability in cowpea. *Mysore Journal of Agricultural Sciences*, 27: 209-213.

3.

- a) Research papers published in Academic Journals other than Refereed/Peer Reviewed Journals
- b) Research papers published in Refereed/Peer Reviewed Conferences:

Chauhan N., Agrawal N. and Shakarad M. 2017. Higher expression of key developmental genes in *Drosophila melanogaster* with accelerated development. 18th International Congress of Developmental Biology. ISBD Singapore 2017. 18-22 June 2017.

Choudhary S., Sageena G., Roshan R. and Shakarad M. 2014. Effect of nutrition on the ontogeny of fertility in insect systems. International Conference on Environmental Biology and Ecological Modelling-2014. Visva-Bharati, Santiniketan, India. 24-26 February 2014. Pp 59.

Chandrashekara K. T. and Shakarad M. 2011. Anti Ageing effect of *Aloe vera* on short lived *Drosophila melanogaster*. 1st international symposium on challenges in drug discovery, Karnataka State Open University, Mysore, India. 16- 17 February 2011. pp 55.

Shakarad M. 2008. Testing the theories of division of labour in a higher termite, *Odontotermes obesus*. 32nd Conference of the Ethological Society and National Symposium on Fish Behaviour, Versova, Andheri (W), Mumbai, India.

Shakarad M. 2005. The simultaneous evolution of faster development and elongated lifespan in *Drosophila melanogaster* under multiple trait selection. 10th Congress of European Society for Evolutionary Biology, Krakow, Poland.

Shakarad M. and Korb J. 2003. Development of neotenic in the lower termite, *Cryptotermes secundus*. 28th Conference of the Ethological Society of India, Tirunelveli, India.

Shakarad M., Prasad N. G., Rajamani M. and Joshi A. 2001. Evolution of life-time fecundity patterns in *Drosophila melanogaster*. XXVII International Ethological Conference, Tübingen, Germany.

Arathi H.S., Shakarad M. and Gadagkar R. 1998. Social organization in genetically diverse colonies of *Ropalidia marginata*: Implications for social evolution. Proceedings of the XIII International Congress of IUSSI, Adelaide, Australia.

Crosland M. W. J., Shakarad M., Lok E. and Traniello J. F. A. 1996. Temporal polyethism in the termite *Reticulitermes fukienensis* (Isoptera: Rhinotermitidae). Entomological Society of America Annual Meeting, U.S.A.

Crosland M. W. J., Shakarad M., Lok C. M., Zhang J. H., Wong T. C. and Traniello J. F. A. 1996. Temporal polyethism in the termite *Reticulitermes fukienensis* (Isoptera: Rhinotermitidae). XX International Congress of Entomology, Fienze, Italy.

Arathi H.S., Shakarad M. and Gadagkar R. 1996. Testing kinship theory with *Ropalidia marginata*. XX International

Congress of Entomology, Frieze, Italy.

Arathi H.S., Shakarad M. and Gadagkar R. 1996. Co-operation among non-kin of *Ropalidia marginata*. 6th international Behavioural Ecology Conference, Canberra, Australia.

c) *Research papers Published in Conferences/Seminar other than Refereed/Peer Reviewed Conferences:*

4. *Other publications (Edited works, Book reviews, Festschrift volumes, etc.):*

Shakarad M. 2009. Experimental evidence for cooperation, an important process in evolution of complex systems. *Indian Journal of Microbiology*, 49: 295-296.

Shakarad M. 1999. Review of "Annual Review of Entomology" vol. 44. *Current Science*, 77: 1106-1107.

Conference Organization/ Presentations (in the last three years)

List against each head (If applicable)

1. *Organization of a Conference*
2. *Participation as Paper/Poster Presenter*

Research Projects (Major Grants/Research Collaboration)

1. Title of Project: Exploring diversity, functional dynamics and biotechnological applications of bacterial communities inhabiting hot water spring atop the Himalayan ranges at Manikaran, Himachal Pradesh, India.

Funding Agency: Department of Biotechnology (DBT), Govt. of India

Total Grant of Project: Rs.52.23 lakhs

Date of Commencement: February 2017

Date of Completion: January 2020

2. Title of Project: Production of rifamycin analogues against multi-drug resistant (MDR) strains of *Mycobacterium tuberculosis* by the manipulation of rifamycin polyketide biosynthetic gene cluster of *Amycolatopsis mediterranei* S699 and understanding the changes in human microbiome under antibiotic treatment regimen in patients suffering from tuberculosis.

Funding Agency: Department of Biotechnology (DBT), Govt. of India

Total Grant of Project: Rs.68.33 lakhs

Date of Commencement: October 2015

Date of Completion: October 2018

3. Regulation of heat shock proteins in *Drosophila melanogaster* populations simultaneously selected for faster pre-adult development and late reproduction. Council of Scientific & Industrial Research, Government of India. Grant amount: INR 30 lakh.

4. Cost of selection response to simultaneous selection on two divergent life-history traits in *Drosophila melanogaster*, Council of Scientific & Industrial Research, Government of India. Grant amount: INR 20 lakh.

5. Evolution of life-history traits in *Drosophila melanogaster* under multiple divergent selection pressures, Council of Scientific

& Industrial Research, Government of India. Grant amount: INR 17 lakh.

6. Division of labour in termites: How is it achieved? Department of Science & Technology, Government of India. Grant amount: INR 17.5 lakh.

7. A model lower termite to understand division of labour amongst workers (Co PI with Crosland, M. W. J., and Traniello, J. F. A.), Research Grant Council of Hong Kong. Grant amount: HK\$ 780,830 (≈ 100,000 US\$)

Awards and Distinctions

Visiting Fellowship, Jawaharlal Nehru Centre For Advanced Scientific Research (JNCASR), Bangalore, India, 2006.

Council of Scientific and Industrial Research, Government of India, Travel Grant, 2001.

Department of Science and Technology, Government of India, Travel Grant, 2001.

Research Fellowship, Indian Institute of Science, Bangalore, 1990 to 1995.

University of Agricultural Sciences, Bangalore, Gold Medal for the highest GPA during Master's in Genetics and Plant Breeding, 1989.

Indian Council for Agricultural Research, Junior Research Fellowship in Genetics and Plant Breeding, 1987 to 1989.

University of Agricultural Sciences, Dharwad, Merit Scholarship, 1984 to 1987.

Association With Professional Bodies

1. *Editing*: Member, Editorial Board of Journal of Genetics, Aug 2004- Dec 2011.
2. *Reviewing*: *BMC Genomics*, *Frontiers in Zoology*, *Journal of Genetics*, *Journal of Bioscience*, *Resonance: Journal of Science Education*, *Current Science*, *Proceedings of Indian National Science Academy: Biological Sciences*, *Entomon*, *Journal of the Bombay Natural History Society*.
3. *Advisory*:
4. *Committees and Boards*: Executive Board Member, Ethological Society of India
5. *Memberships*: Life member, Ethological Society of India
6. *Office Bearer*:

Other Activities

Signature of Faculty Member

- You are also requested to also give your complete resume as a DOC or PDF file to be attached as a link on your faculty page.