

# Curriculum Vitae

## Personal Data

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Name **Sajid Malik**  
Address (home) House # 677, Str. 61, G-11/2, Islamabad  
Address (office) Department of Animal Sciences, Quaid-i-Azam University, 45320 Islamabad  
Email [malik@qau.edu.pk](mailto:malik@qau.edu.pk), [malik00pk@yahoo.com](mailto:malik00pk@yahoo.com)  
Date of Birth 02-02-1978

## School

1982—1991 City High School, DG Khan  
1991—1993 Government Postgraduate College, DG Khan

## University

1993—1995 **B.Sc.** (Zool./Bot./Chem.) Bahauddin Zakariya University, Multan  
1995—1998 **M.Sc.** (Zoology) Bahauddin Zakariya University, Multan  
1998—2000 **M.Phil.** (Genetics) Department of Biological Sciences, Quaid-i-Azam University, Islamabad  
(Supervisor Prof. Dr. Mahmud Ahmad) **Thesis:** A study of Pakistani families showing hereditary skeletal dysplasias.  
2002—2005 **Ph.D. studies** (Human Genetics) Institute of Human Genetics, Philipps University Marburg, Germany  
(Supervisor Prof. Dr. Karl-Heinz Grzeschik) **Thesis:** Gene mapping in syndactyly families.  
2005—2008 **Postdoctoral fellowship** (Human Genetics) Institute of Human Genetics, Philipps University Marburg, Germany

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## Career

1998—2000 Junior Research Assistant Dept. of Biological Sci., Quaid-i-Azam Univ. Isl.  
2000—2001 Wildlife Consultant Hagler Bailly Inc. Pakistan  
2001—2002 Lecturer (ZOOLOGY) FG College H-9, Ministry of Education, Islamabad  
2002—2005 PhD Research Fellow Philipps University Marburg, Germany  
2005—2008 Postdoc Research Fellow Philipps University Marburg, Germany  
2008—2012 Assistant Professor (GENETICS) Department of Animal Sciences, Faculty of Biological Sciences, Quaid-i-Azam University, Islamabad  
2012—present Associate Professor Department of Animal Sciences, Faculty of Biological Sciences, Quaid-i-Azam University, Islamabad

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## Publications

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- Malik S**, Ullah S, Afzal M, Lal K, Haque S. Clinical and descriptive genetic study of polydactyly: a Pakistani experience of 313 cases. *Clin Genet*. 2013 Jun 17. doi: 10.1111/cge.12217.
- Malik S**, Afzal M. Congenital terminal transverse deformity of upper limb: clinical and radiological findings in a sporadic case. *J Col Phy Surg Pak* 23(3):219-220, 2013.
- Malik S**. Syndactyly: phenotypes, genetics and current classification. *Eur J Hum Genet* 20(8):817-24, 2012.
- Malik S**, Riaz HF. Terminal transverse deficiency of fingers, symbrachydactyly with anonychia of toes, and congenital scalp defect: Case report of a subject with Adams-Oliver syndrome. *Pak J Med Sci* 28(1):231-234, 2012.
- VanderMeer JE, Afzal M, Alyas S, Haque S, Ahituv N, **Malik S**. A novel ZRS mutation in a Balochi tribal family with triphalangeal thumb, pre-axial polydactyly, post-axial polydactyly, and syndactyly. *Am J Med Genet* 158A(8):2031-5, 2012.
- Malik S**, Jabeen N. Zygodactyly with thumb aplasia: an unusual variant in a male subject. *J Col Phy Surg Pak* 21(11):710-712, 2011.
- Riaz HF, **Malik S**. Case report of a neonate with congenital transverse deficiency of hand. *Pak J Med Sci* 27(5):1177-1180, 2011.
- Malik S**, Afzal M, Gul S, Wahab A, Ahmad M. Autosomal dominant syndrome of camptodactyly, clinodactyly, syndactyly, and bifid toes. *Am J Med Genet* 152A:2313–2317, 2010.
- Abbasi AA, Pappas Z, **Malik S**, Bangs F, Schmidt A, Koch S, Lopez-Rios J, Grzeschik KH. Human intronic enhancers control distinct sub-domains of Gli3 expression during mouse CNS and limb development. *BMC Dev Biol*. 10(1):44, 2010.
- Malik S**, Grzeschik K-H. Congenital, low penetrance lymphedema of lower limbs maps to chromosome 6q16.2-q22.1 in an inbred Pakistani family. *Hum Genet* 123:197–205, 2008.
- Malik S**, Schott J, Schiller J, Junge A, Baum E, Koch MC. Fifth finger camptodactyly maps to chromosome 3q11.2-q13.12 in a large German kindred. *Eur J Hum Genet* 16(2):265-269, 2008.
- Malik S**, Grzeschik K-H. Synpolydactyly: clinical and molecular advances. *Clin Genet* 73(2):113-120, 2008.
- Malik S**, Girisha KM, Wajid M, Roy AK, Phadke SR, Haque S, Ahmad W, Koch MC, Grzeschik KH. Synpolydactyly and *HOXD13* polyalanine repeat: addition of 2 alanine residues is without clinical consequences. *BMC Med Genet* 8(1):78, 2007.
- Pappas Z, Abbasi AA, **Malik S**, Goode DK, Callaway H, Elgar G, deGraaff E, Lopez-Rios J, Zeller R, Grzeschik K-H. An ultraconserved non-coding sequence element controls a subset of spatiotemporal *GLI3* expression. *Dev Growth Diff* 49(6):543-553, 2007.
- Abbasi AA, Pappas Z, **Malik S**, Goode D, Callaway H, Elgar G, Grzeschik K-H. Intragenic conserved non-coding elements from human *GLI3* are cell- and tissue-specific enhancers. *PloS ONE* 2:e366, 2007.
- Malik S**, Abbasi A, Ansar M, Ahmad W, Koch M, Grzeschik KH. Genetic heterogeneity of synpolydactyly: a novel locus SPD3 maps to chromosome 14q11.2-q12. *Clin Genet* 69(6):518-524, 2006.
- Malik S**, Schott J, Ali SW, Oeffner F, Amin-ud-Din M, Ahmad W, Grzeschik K-H, Koch MC. Evidence for clinical and genetic heterogeneity of syndactyly type I: the phenotype of second and third toe syndactyly maps to chromosome 3p21.31. *Eur J Hum Genet* 13(12):1268-1274, 2005.
- Malik S**, Ahmad W, Grzeschik K-H, Koch MC. A simple method for characterising syndactyly in clinical practice. *Genet Couns* 16(3):229-238, 2005.
- Malik S**, Percin FE, Ahmad W, Percin S, Akarsu NA, Koch MC, Grzeschik K-H. Autosomal recessive mesoaxial synostotic syndactyly with phalangeal reduction maps to chromosome 17p13.3. *Am J Med Genet* 134(4):404-408, 2005.
- Rafiq MA, Faiyaz-Ul-Haque M, Ud Din MA, **Malik S**, Sohail M, Anwar M, Haque S, Paterson AD, Tsui LC, Ahmad W. A novel locus of ectodermal dysplasia maps to chromosome 10q24.32-q25.1. *J Invest Dermatol*. 124(2):338-342, 2005.
- Malik S**, Arshad M, Amin-Ud-Din M, Oeffner F, Dempfle A, Haque S, Koch MC, Ahmad W, Grzeschik K-H. A novel type of autosomal recessive syndactyly: clinical and molecular studies in a family of Pakistani origin. *Am J Med Genet* 126(1):61-67, 2004.

Salhi A, Bornholdt D, Oeffner F, **Malik S**, Heid E, Happle R, Grzeschik KH. Multiple familial trichoepithelioma caused by mutations in the cylindromatosis tumor suppressor gene. *Cancer Res.* 1;64(15):5113-5117, 2004.

Amin-ud-Din M, Fazeli N, Rafiq MA, **Malik S**. Serological study among the municipal employees of Tehran, Iran: distribution of ABO and Rh blood groups. *Haema* 7(4):502-504, 2004.

Rafique MA, Ansar M, Jamal SM, **Malik S**, Sohail M, Faiyaz-UI-Haque M, Haque S, Leal SM, Ahmad W. A locus for hereditary hypotrichosis localized to human chromosome 18q21.1. *Eur J Hum Genet* 11(8):623-628, 2003.

## PROFESSIONAL TRAINING – Courses and Certifications

S. #	DATE	TITLE	PLACE & ORGANIZER
1	Oct. 2012 – Jan. 2013	<b>Health in Numbers: Quantitative Methods in Clinical &amp; Public Health Research.</b> Online course PH207x.	Web-based course: EdX and Harvard School of Public Health, Harvard University, Boston
2	Sep. 03-07, 2012	<b>Bioinformatic Approaches for Analysis of High-Throughput Biological Data.</b>	by Dept. of Bioengineering, Istanbul Bilgi University, Istanbul, Turkey
3	July 31, 2010	<b>Promoting Innovation in Education.</b> One day teachers convention.	by National Productivity Organization, Ministry of Industries & Production, Ministry of Culture, Islamabad
4	July 6–10, 2009	<b>Enhanced Production of Recombinant Biomolecules of Commercial Importance.</b> Practical course	at Dr. AQ Khan Institute of Biotechnology and Genetic Engineering, University of Karachi
5	July 21 <sup>st</sup> , 2008	<b>Sharing Biodiversity Data on Internet.</b> Practical course	at Best Western Islamabad by Pakistan Museum of Natural History, and Global Biodiversity Information Facility Denmark
6	May 30 <sup>th</sup> , 2007	<b>QPCR Boot camp: Real-Time PCR from A to Z.</b>	at the Institute of Molecular Biology and Tumour Research, Marburg Germany by STRATAGENE® Inc. Germany
7	Sep. 20–21, 2004	<b>Effective Scientific Writing Workshop.</b> Practical course	at the Institute of Molecular Biology and Tumour Research, Marburg Germany by BioScript International, Vienna Austria
8	Jan. 16–Feb. 20, 2004	<b>Bioinformatics Workshop.</b> Practical course	at Max-Planck-Institute for Terrestrial Microbiology, Marburg Germany by Graduiertenkolleg 767, International PhD Programme
9	June 02–03, 2003	<b>Presentation Techniques Workshop.</b> Practical course	at the Institute of Human Genetics, Philipps-University, Marburg Germany by BioScript International, Vienna Austria
10	Feb. 17–21, 2003	<b>Genetic Linkage Analysis II: Sib-pair Analysis.</b> Practical course	at the Erasmus Medical Centre, Erasmus University, Rotterdam Holland by Netherlands Institute for Health Sciences, Rotterdam Holland
11	Feb. 10–14, 2003	<b>Genetic Linkage Analysis I: Model Based Analysis.</b> Practical course	at the Erasmus Medical Centre, Erasmus University, Rotterdam Holland by Netherlands Institute for Health Sciences, Rotterdam Holland
12	Feb. 03–07, 2003	<b>Medical Demography.</b> Practical course	at the Erasmus Medical Centre, Erasmus University, Rotterdam Holland by Netherlands Institute for Health Sciences, Rotterdam Holland
13	Nov. 11–18, 2002	<b>Study of Protein-DNA interaction.</b> Practical Course in Advanced Molecular Genetics	at/by the Department of Biology (Genetics), Philipps-University, Marburg Germany
14	Sep. 23–27, 2002	<b>DNA Array-Technology, Microarray Workshop.</b> Practical course	at Max-Planck-Institute for Terrestrial Microbiology, Marburg Germany by Graduiertenkolleg 767, International PhD Programme
15	Aug. 15–Oct. 06, 1994	<b>Office Automation Software Tools.</b> Intensive computer training course	by Agriculture Development Bank of Pakistan and AT&T. at Computer Literacy Centre, Agri. Dev. Bank of Pakistan, DG Khan

## Scholarships & Awards

**Best Poster Prize** in the 17<sup>th</sup> Annual meeting of German Society of Human Genetics, Heidelberg Germany (Mar. 11, 2006). Poster title: Conserved non-coding sequence elements control spatiotemporal expression of *GLI3*.

**Postdoctoral fellowship** by the German Research Foundation (Deutsche Forschungsgemeinschaft) from March 2005—Jan 2008.

**PhD Research Fellowship** in the International PhD Research Training Programme (Graduiertenkolleg) funded by the German Research Foundation (2002—2005)

**University Grants Commission Scholarship** in M.Phil. Support of scientific talent/grant of subsistence allowance for one year (1999—2000)

**Merit Certificate** for standing first in the M.Sc. (Zoology), at Govt. Postgraduate College, DG Khan (1998)

## PRESENTATIONS made in International Conferences / Seminars / Workshops

### CONFERENCES

DATE	TITLE	PLACE & ORGANIZER
Mar. 9— 12, 2005	Autosomal recessive mesoaxial synostotic syndactyly with phalangeal reduction maps to chromosome 17p13.3.	German Society of Human Genetics, Halle University Germany 16 <sup>th</sup> Ann Conf of German Society of Human Genetics
June 12— 15, 2004	Genetic mapping in families with hereditary syndactylies.	European Human Genetics Conference, Munich Germany Ann Conf of European Soc Hum Genet
Oct. 01— 04, 2003	A novel type of autosomal recessive syndactyly: clinical and molecular studies in a family of Pakistani origin.	German Society of Human Genetics, Philipps University Marburg Germany 14 <sup>th</sup> Ann Conf of German Soc Hum Genet

### SEMINARS

Jan 25, 2005	Linkage Analysis and Gene Mapping	at the Institute of Molecular Biology and Tumour Research, Philipps-University, Marburg Germany by Graduiertenkolleg 767, International PhD programme in Transcriptional Control of Developmental Processes
May 27, 2004	Haplotype Blocks in Human Genome	at the Institute of Human Genetics, Philipps-University, Marburg Germany by Graduiertenkolleg 767, International PhD programme
Jun. 17, 2003	Genetic Mapping in Families with Hereditary Syndactylies	at the Institute of Molecular Biology and Tumour Research, Philipps-University, Marburg Germany by Graduiertenkolleg 767, International PhD programme
Mar. 03, 2003	Parametric linkage analysis	at the Institute of Human Genetics, Philipps-University, Marburg Germany by Graduiertenkolleg 767, International PhD programme
May. 16, 2002	Genetic mapping of candidates of syndactyly genes in Pakistani families	at the Institute of Human Genetics, Philipps-University, Marburg Germany by Graduiertenkolleg 767, International PhD programme

### WORKSHOPS

March 16, 2004	Genetic mapping in Families with hereditary syndactylies.	at Kleinwalsertal, Austria. by 2nd Winterschool Workshop of the Graduiertenkolleg 767 Marburg/Giessen-Rotterdam. Transcriptional Control of Developmental Processes
Nov. 10, 2002	Genetic analysis of candidate genes for syndactyly identified in Pakistani families.	at the Institute of Molecular Biology and Tumour Research, Philipps-University, Marburg Germany by Graduiertenkolleg GRK767. Progress report workshop of the International PhD programme

## PROCEEDINGS / Presentations in Scientific Conferences

YEAR	TITLE / ABSTRACT	ORGANIZER / PUBLISHER
2013	<u>Ullah S, Malik S</u> Genetic epidemiological study of hereditary limb defects in Chitrali population, Northern Pakistan.	Proceedings of 33 <sup>rd</sup> Pakistan Congress of Zoology, Zool. Soc. of Pak., PMNH-AAU, Islamabad
2013	<u>Mumtaz S, Raza MU, Malik S.</u> Clinical and molecular genetics study of families with Seckel like malformation: evidence of a novel skeletal dysplasia?	Proceedings of 33 <sup>rd</sup> Pakistan Congress of Zoology, Zool. Soc. of Pak., PMNH-AAU, Islamabad
2013	<u>Kanwal M, Ilyas S, Mazhar K, Malik S</u> PCR based diagnosis of Fragile X syndrome in a cohort of mentally retarded Pakistani subjects.	Proceedings of 33 <sup>rd</sup> Pakistan Congress of Zoology, Zool. Soc. of Pak., PMNH-AAU, Islamabad
2013	<u>Jabeen N, Malik S</u> Prevalence of congenital anomalies and non-communicable diseases in district Bhimber, Azad Jammu and Kashmir, Pakistan	Proceedings of 33 <sup>rd</sup> Pakistan Congress of Zoology, Zool. Soc. of Pak., PMNH-AAU, Islamabad
2013	<u>Riaz HF, Malik S</u> A prospective epidemiological study of congenital anomalies and non-communicable diseases in female population of District Rahim Yar Khan, Southern Punjab, Pakistan	Proceedings of 33 <sup>rd</sup> Pakistan Congress of Zoology, Zool. Soc. of Pak., PMNH-AAU, Islamabad
2013	<u>Raza MU, Malik S</u> Genetic structure of human population of Chichawatni, central Punjab Pakistan, as revealed by the temporal variations in allelic frequencies and heterozygosities at <i>ABO</i> and <i>Rh</i> loci.	Proceedings of 33 <sup>rd</sup> Pakistan Congress of Zoology, Zool. Soc. of Pak., PMNH-AAU, Islamabad
2013	<u>Mumtaz S, Raza MU, Malik S.</u> Clinical and molecular genetics study of two Pakistani families with Seckel like syndrome.	Proceedings of 6th SAARC Congress of Radiology (SCR2013) / 28th Annual Conf. of Radiol. Soc. Pak. Rawalpindi (Feb.8-10)
2011	<u>Ali S, Malik S.</u> Genetic heterogeneity, gene diversity and clinal analysis at <i>ABO</i> and <i>Rh</i> loci among Khyber Pukhtunkhwa population.	Proceedings of 31 <sup>st</sup> Pakistan Congress of Zoology, Zoological Society of Pakistan, UAJK, Muzaffarabad
2011	<u>Atta-ur-Rehman, Malik S.</u> Pattern of genetic heterogeneity and gene diversity at <i>ABO</i> and <i>Rh</i> loci in Bajaur and Mohmand Agencies, FATA, Pakistan.	Proceedings of 31 <sup>st</sup> Pakistan Congress of Zoology, Zoological Society of Pakistan, UAJK, Muzaffarabad
2011	<u>Jabeen N, Malik S.</u> Genetic epidemiology of hereditary malformations and their association with consanguinity in District Bhimber, AJK.	Proceedings of 31 <sup>st</sup> Pakistan Congress of Zoology, Zoological Society of Pakistan, UAJK, Muzaffarabad
2011	<u>Riaz HF, Malik S.</u> Consanguinity and inbreeding co-efficient estimates in two major population isolates (Muslims and Hindus) in District Rahim Yar Khan.	Proceedings of 31 <sup>st</sup> Pakistan Congress of Zoology, Zoological Society of Pakistan, UAJK, Muzaffarabad
2009	<u>Abbasi AA, Papatidis Z, Malik S, Weirich C, Grzeschik K-H.</u> Expression patterning in CNS and limb from fish to mammals by <i>GLI3</i> -intronic enhancers. 13-P048. doi:10.1016/j.mod.2009.06.521.	Proceedings of 16 <sup>th</sup> International Society of Developmental Biology Congress 2009, 6-10 September 2009, Edinburgh, Scotland, UK. Mechanisms of Development. Vol.126, Supp. August 2009, Pages S209
2007	<u>Malik et al.</u> Tetrapod specific conserved non-coding elements (CNEs) from intronic and upstream region of <i>GLI3</i> are transcriptional enhancers.	Proceedings of 18 <sup>th</sup> Annual meeting of German Society of Human Genetics, Bonn Germany
2007	<u>Abbasi et al.</u> Intragenic conserved non-coding elements from human <i>GLI3</i> are cell- and tissue-specific enhancers.	Proceedings of 18 <sup>th</sup> Annual meeting of German Society of Human Genetics, Bonn Germany
2006	<u>Grzeschik et al.</u> Conserved non-coding sequence elements control spatiotemporal expression of <i>GLI3</i> .	Proceedings of 9 <sup>th</sup> International conference on limb development and regeneration, Hyogo Japan
2006	<u>Papatidis et al.</u> Conserved non-coding sequence elements control spatiotemporal expression of <i>GLI3</i> . (won the <b>Best Poster Prize</b> )*	Proceedings of 17 <sup>th</sup> Annual meeting of German Society of Human Genetics, Heidelberg Germany
2005	<u>Malik et al.</u> A novel locus for recessive syndactyly maps to chromosome 17p13.3.	Proceedings of Annual meeting of European Society of Human Genetics, Prague Czech Republic
2005	<u>Malik et al.</u> Autosomal recessive mesoaxial synostotic syndactyly with phalangeal reduction maps to chromosome 17p13.3.	Proceedings of 16 <sup>th</sup> Annual meeting of the German Society of Human Genetics, Halle Germany
2004	<u>Malik et al.</u> Genetic mapping in families with hereditary syndactylies.	Proceedings of Annual meeting of European Human Genetics Conference, Munich Germany. Eur J Hum Genet 12, Supplement 1:112.
2003	<u>Malik et al.</u> A novel type of autosomal recessive syndactyly: clinical and molecular studies in a family of Pakistani origin.	Proceedings of 14 <sup>th</sup> Annual meeting of the German Society of Human Genetics, Marburg Germany
1999	<u>Ahmad M, Haque S, Abbas H, Ahmad W, Ambar R, Malik S.</u> Autosomal recessive ectodermal dysplasia in an inbred Pakistani family.	Proceedings of 19 <sup>th</sup> Pakistan Congress of Zoology, Zoological Society of Pakistan, NARC Islamabad

## Symposiums and seminars – attended

DATE	TITLE	PLACE & ORGANIZER
Mar. 13—18, 2004	<b>Transcriptional Control of Developmental Processes.</b> 2nd Winterschool of the Graduiertenkolleg 767, International PhD Programme	at Kleinwalsertal Austria by Institute of Molecular Biology and Tumour Research, Marburg Germany
July 16th, 2003	<b>Genomics Seminar</b>	by AMERSHAM® Biosciences Europe GmbH, at the Institute of Human Genetics, Philipps-University, Marburg Germany
May 23—24, 2003	<b>Reflections on Skin, Hair and Genes:</b> Symposium on hereditary skin diseases	Department of Dermatology and Allergy, Philipps-University, Marburg Germany
Oct. 06—09, 2002	<b>Biochemistry of Nucleoprotein Complexes, 6<sup>th</sup> Workshop</b> of International PhD Graduate Programme	at Castle of Rauscholzhhausen, Giessen Germany by Philipps-University, Marburg Germany

## Conference/ Workshop/ Symposium organized as Organizer / Resource Person

DATE	TITLE	LOCATION	SPONSOR. AGENCY
Mar. 04-08, 2013	4 <sup>th</sup> Teachers Training Workshop: <b>Laboratory Methods in Biology</b>	Dept of Animal Sciences, Quaid-i-Azam Univ., Isl.	Higher Education Commission and Pakistan Science Foundation
Jan. 28-29, 2013	Symposium on <b>Genetic and molecular approaches to the control of disease and pathogenicity in animals and humans</b>	Dept of Animal Sciences, Quaid-i-Azam Univ., Isl.	Higher Education Commission
Jan. 09, 2013	Symposium on <b>Molecular medicine and DNA based diagnostics</b>	Dept of Animal Sciences, Quaid-i-Azam Univ., Isl.	Quaid-i-Azam University
July 18-19, 2012	Minisymposium on <b>Genetic polymorphism, drug delivery systems and new therapeutic approaches for complex diseases</b>	Dept of Animal Sciences, Quaid-i-Azam Univ., Isl.	Higher Education Commission, Islamabad
December 26- 30, 2011	3 <sup>rd</sup> Teachers Training Workshop: <b>Laboratory Methods in Genetics. (1 week)</b>	Dept of Animal Sciences, Quaid-i-Azam Univ., Isl.	Higher Education Commission and Pakistan Science Foundation
October 19— 20, 2011	Mini Symposium on <b>Advances in Neurobiology</b>	Dept of Animal Sciences, Quaid-i-Azam Univ., Isl.	Quaid-i-Azam University, Islamabad
August 02-11, 2010	<b>Biostatistics and Genetic Epidemiology:</b> Practical Training Course (10 days)	Dept of Animal Sciences, Quaid-i-Azam Univ., Isl.	Quaid-i-Azam University, Islamabad
February 22- 26, 2010	2 <sup>nd</sup> Teachers Training Workshop: <b>Laboratory Methods in Genetics (1 week)</b>	Dept of Animal Sciences, Quaid-i-Azam Univ., Isl.	Higher Education Commission, Islamabad
August 03-08, 2009	Teachers Training Workshop: <b>Laboratory Methods in Genetics (1 week)</b>	Dept of Animal Sciences, Quaid-i-Azam Univ., Isl.	HEC and Pakistan Science Foundation, Islamabad

## Research Project conducted as Principal Investigator

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- Jan. 2013. **Study of hereditary limb anomalies in the Pakistani population.** University Research Fund, QAU Islamabad (Amount 57,142 Rs.)
- July. 2012-13. **Phenotypic diversity and genetic differentiation of blood group genes in North-Western populations of Pakistan.** Higher Education Commission Islamabad (Amount 0.971 Million Rs.)
- Feb. 2012. **Genetic epidemiology of congenital and hereditary anomalies in consecutive live-births at Pakistan Institute of Medical Sciences, Islamabad.** University Research Fund, QAU Islamabad (Amount 60,000 Rs.)
- Aug. 2011-12. **Genetics lab up gradation under the Institutional Support Program.** Pakistan Science Foundation (PSF), Islamabad (Amount 0.878 Million Rs. )
- Jan. 2011. **Study of congenital and hereditary anomalies in District DG Khan.** University Research Fund, QAU Islamabad (Amount 60,000 Rs.)
- Aug. 2010-12. **Genetic epidemiological studies of hereditary skeletal disorders in Punjab.** Higher Education Commission, Islamabad. (Amount 1.462 Million Rs.)
- Jan. 2010. **Study of consanguinity and morbidity in District Muzaffargarh, Punjab.** University Research Fund, QAU Islamabad (Amount 54,000 Rs.)
- Feb. 2009. **Study of consanguinity in Districts Multan and Layyeh, Southern Punjab.** University Research Fund, QAU Islamabad (Amount 84,000 Rs.)
- May 2006. **Regulation of *GLI* genes expression.** Sponsored by P.E. Kempkes Foundation, Marburg Germany. (Amount 12,000 Euros)

## Invited lectures

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- Limb development: lessons learnt from syndactyly and polydactyly.** At Department of Medical Genetics, Hacettepe University Medical Faculty, Ankara, Turkey. (12-09-2012)
- Population studies in North-Western Pakistan: *ABO* and *Rh* gene diversity in Pushtoons.** At National Symposium on Biodiversity of Pakistan, at Pakistan Museum of Natural History Islamabad. (09-06-2011)
- Syndactyly as a model of limb defects.** At Ziauddin University Clifton Campus, Karachi. (10-07-2009)
- Design, evaluation and implementation of novel drug delivery systems for breast cancer in Pakistan.** At Dept of Oncology, Shaukat Khanum Memorial Hospital, Lahore. (03-07-2009)
- Syndactyly: clinical and molecular approach.** At Department of Social and Preventive Pediatrics, King Edward Medical University, Mayo Hospital Lahore. (18-10-2008)
- Research methods in genetic epidemiology.** At the Centre for Research in Endocrinology and Reproductive Sciences, Department of Physiology and Cell Biology, University of Health Sciences Lahore. (16-04-2008)
- Syndactyly: a model of disease and development.** At the Department of Physiology and Cell Biology, University of Health Sciences Lahore. (03-03-2008)
- Tetrapod Limb: models and approaches.** Web-based / video conferencing invited seminar (Germany → Pakistan) at Philipps University Marburg Germany, and Quaid-i-Azam University, Islamabad; Hosted by HEC network cell, Islamabad (17-07-2007)

## Teaching: Courses conducted

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### *MSc courses*

- General Genetics
- Molecular Biology
- Evolution
- Animal Ecology

### *MPhil / PhD courses*

- Human Genetics – I
- Human Genetics – II
- Population Genetics
- Advances in Molecular Genetics