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HUMAIRA AYUB

Assistant Professor (Biomedical Sciences)

EDUCATION

Degree/Certificate	Year of Passing	Board/University	Marks/Grade	Major subjects
PhD (Biosciences)	2015	COMSATS Institute of Information Technology, Chak Shahzad (CIIT)	3.5 CGPA/A	Molecular Genetics, Molecular Biology
M.S. (Biosciences)	2009	COMSATS Institute of Information Technology, Chak Shahzad (CIIT)	3.5 CGPA/A	Molecular Genetics, Molecular Biology
B.S. (Biochemistry)	2007	Hazara University, Mansehra.	3.51 CGPA/A	Biochemistry
H.S.S.C	2001	Abbottabad Board	79.64%/ A	Biology, Chemistry, Physics
S.S.C	1999	Abbottabad Board	74.36 %/ A	Biology, Chemistry, Physics, Mathematics

THESES PROJECT

1. **B.S.** Thesis entitled **"Determination of cardiac markers in myocardial infarction"** Hazara University, Mansehra, 2007.
2. **M.S.** Thesis entitled **"Study of APOC3, eNOS & HSP70 Polymorphisms in Glaucoma & Normal Population of Pakistan"** COMSATS University Islamabad, 2009.
3. **PhD** Thesis entitled **"Genetic Study of Multifactorial Eye Disorders in Pakistan"** COMSATS University Islamabad, 2015.

RESEARCH INTEREST AND SPECIALIZATION

Human Molecular Genetics, Pharmacogenetics, Meta-Analysis, Next generation sequencing data handling

COCURRICULAR ACTIVITIES AND INTERESTS

Travelling and knowing various cultures, reading for amusement, playing badminton, spending quality time with family, Learning about history, thought provoking conversations.

PROFESSIONAL EXPERIENCE

Designation	From	To	Employer
Guest Researcher	7-6-2011	31-12-2011	Department of human genetics, Radboud University, Nijmegen, The Netherlands
Guest Researcher	10-1-2013	31-6-2013	Department of human genetics, Radboud University, Nijmegen, The Netherlands
Assistant Professor	10-2-2016	17-3-2020	COMSATS University Islamabad, Abbottabad Campus
Assistant Professor	17-3-2020	Till date	PAK-Austria Fachhochschule Institute of Applied Sciences and Technology

RESEARCH PUBLICATIONS

Publication	**Year**	**Impact Factor**
1. Molecular Mechanisms of Complement System Proteins and Matrix Metalloproteinases in the Pathogenesis of Age-Related Macular Degeneration. N Mansoor, F Wahid, M Azam, K Shah, AI den Hollander, R Qamar, ... **H Ayub**. ***Current molecular medicine*** 2019:19 (10), 705-718. ***Corresponding Author**	**2019**	**2.254**
2. The protective variant rs7173049 at LOXL1 locus impacts on retinoic acid signaling pathway in pseudoexfoliation syndrome. D Berner, U Hoja, M Zenkel, JJ Ross, S Uebe, D Paoli, P Frezzotti, ...**H Ayub**…***Human molecular genetics*** 2019:28 (15), 2531-2548.	**2019**	**4.544**
3. Association of rs10490924 in ARMS2/HTRA1 with age-related macular degeneration in the Pakistani population. **H Ayub**, S Shafique, A Azam, I Muslim, NA Qazi, F Akhtar, MA Khan, ...***Annals of human* genetics** 2019**:** https://doi.org/10.1111/ahg.12311. **Primary Author**	**2019**	**1.529**
4. MicroRNA biogenesis, gene silencing mechanisms and role in breast, ovarian and prostate cancer. S Khan, **H Ayub**, T Khan, F Wahid ***Biochimie*** doi.org/10.1016/j.biochi.2019.09.001	**2019**	**3.188**
5. Genetic association study of exfoliation syndrome identifies a protective rare variant at LOXL1 and five new susceptibility loci. T Aung, M Ozaki, MC Lee, U Schlötzer-Schrehardt, G Thorleifsson, ...**H Ayub**… ***Nature genetics*** 2017:49 (7), 993.	**2017**	**27.125**
6. Genome-wide association study identifies five new susceptibility loci for primary angle closure glaucoma. CC Khor, T Do, H Jia, M Nakano, R George, K Abu-Amero, R Duvesh, ...**H Ayub**… ***Nature genetics*** 2016:48 (5), 556.	**2016**	**27.125**
7. Identification of novel CYP1B1 gene mutations in patients with primary congenital and primary open-angle glaucoma. S Micheal, **H Ayub**, SN Zafar, B Bakker, M Ali, F Akhtar, F Islam, MI Khan, ...***Clinical & experimental ophthalmology*** 2015:43 (1), 31-39.	**2015**	**1.180**
8. Homozygosity mapping and targeted sanger sequencing reveal genetic defects underlying inherited retinal disease in families from Pakistan. M Maria, M Ajmal, M Azam, NK Waheed, SN Siddiqui, B Mustafa, **H Ayub**, ...***PLoS One*** 2015:10 (3),	**2015**	**2.776**

e0119806.		
9. Variants in the ASB10 gene are associated with primary open angle glaucoma. S Micheal, **H Ayub**, F Islam, SN Siddiqui, WA Khan, F Akhtar, R Qamar, ...***PloS one*** 2015:10 (12), e0145005.	**2015**	**2.776**
10. Genetic spectrum of autosomal recessive non-syndromic hearing loss in Pakistani families. S Shafique, S Siddiqi, M Schraders, J Oostrik, **H Ayub**, A Bilal, M Ajmal, ...***PloS one*** 2014:9 (6), e100146.	**2014**	**2.776**
11. Association of known common genetic variants with primary open angle, primary angle closure, and pseudoexfoliation glaucoma in Pakistani cohorts. S Micheal, **H Ayub**, MI Khan, B Bakker, FE Schoenmaker-Koller, M Ali, ...***Molecular vision*** 2014:20, 1471.	**2014**	**2.245**
12. Exome sequencing identifies three novel candidate genes implicated in intellectual disability. Z Agha, Z Iqbal, M Azam, **H Ayub**, LELM Vissers, C Gilissen, SHB Ali, ... ***PloS one*** 2014:9 (11), e112687.	**2014**	**2.776**
13. Association of a Polymorphism in the BIRC6 Gene with Pseudoexfoliative Glaucoma. **H Ayub**, S Micheal, F Akhtar, MI Khan, S Bashir, NK Waheed, M Ali, ...***PloS one*** 2014:9 (8), e105023. **Primary Author**	**2014**	**2.776**
14. A genetic variant in TMCO1 is strongly associated with primary open angle, primary angle closure and pseudoexfolation glaucoma. S Micheal, **H Ayub**, M Khan, B Bakker, F Schoenmaker-Koller, M Ali, ...***Investigative Ophthalmology & Visual Science*** 2014:54 (15), 6233-6233.	**2014**	**3.812**
15. Exome sequencing identifies a novel and a recurrent BBS1 mutation in Pakistani families with Bardet-Biedl syndrome. M Ajmal, MI Khan, K Neveling, A Tayyab, S Jaffar, A Sadeque, **H Ayub**, ...***Molecular vision*** 2013:19, 644.	**2013**	**2.245**
16. The genetic spectrum of familial hypercholesterolemia in Pakistan. W Ahmed, R Whittall, M Riaz, M Ajmal, A Sadeque, **H Ayub**, R Qamar, ...***Clinica Chimica Acta*** 2013:421, 219-225.	**2013**	**2.535**
17. Exome sequencing identifies a novel and a known BBS1 mutation in Pakistani families with Bardet-Biedl syndrome. M Ajmal, MI Khan, K Neveling, A Tayyab, S Jaffar, A Sadeque, **H Ayub**, ... ***Molecular Vision***. 2013; 19: 644–653.	**2013**	**2.245**
18. CYP1B1 Mutations Cause Glaucoma in Pakistani and Saudi Arabian Patients. S Micheal, **H Ayub**, MI Khan, F Akhtar, M Ali, RK Koenekoop, M Hedrawi, ... I***nvestigative Ophthalmology & Visual Science*** 2012:53 (14), 4499-4499.	**2012**	**3.812**
19. Association of eNOS and HSP70 gene polymorphisms with glaucoma in Pakistani cohorts. **H Ayub**, MI Khan, S Micheal, F Akhtar, M Ajmal, S Shafique, SHB Ali, ...***Molecular vision*** 2010:16, 18. **Primary Author**	**2010**	**2.245**
20.		
Total Impact Factor of all Published Papers **Total Google Scholar Citations**		**100** **433**

h-Index		**11**

CONFERENCE PUBLICATIONS

Genetic Spectrum of congenital Glaucoma. Hamza Khan, **Humaira Ayub**. 4th International Glaucoma Conference. 24th Feb 2018, Peshawar.	2018

BOOK CHAPTERS

Glaucoma genetics in Pakistan. **Humaira Ayub**, Maleeha Azam, Shazia Micheal, Muhammad Imran, Farah Akhtar, Chiea Chuen Khor, Tin Aung, Anneke den Hollander and Raheel Qamar. Advances in Vision Research: Volume 3. Essentials in Ophthalmology, Edited by Prof. Arun Singh, Publisher: Springer-Nature: 2021	2021

STUDENTS SUPERVISION

Supervisory Status	Name of Student	PhD/MS/BS	Title of Synopsis/ Tentative Titles	Status
Supervisor	Hamza Khan	MS	Identification of Novel Disease-Causing Variant for Primary Congenital Glaucoma in a Pakistani Family	Completed 2018
Supervisor	Muhammad Mudassir	MS	Association of Novel Class of Cancer Biomarkers; microRNA Binding Site SNPs (Single Nucleotide Polymorphisms) with Breast Cancer in Pakistani Population	Completed 2019
Supervisor	Wasia Arshid	MS	Clinical Characterization and Molecular Analysis of Primary Congenital Glaucoma Families of Pakistani Origin	Completed 2019
Supervisor	Muhammad Usman	MS	Association Study of microRNA Binding Site Single Nucleotide Polymorphisms with Breast Cancer in Pakistani Population	Ongoing
Supervisor	Aiman Irshad	MS	Pharmacogenetic analysis of ophthalmic beta blockers in Glaucoma	Ongoing
Supervisor	Afeefa Zainab	BS	Genetic Association of Sorbitol Dehydrogenase polymorphisms (SDH) in Primary Open Angle Glaucoma (POAG)	Completed 2016
Supervisor	Naima Mansoor	BS	Molecular Mechanisms of Complement System Proteins and Matrix Metalloproteinases in the Pathogenesis of Age-Related Macular Degeneration	Completed 2017
Supervisor	Wasia Arshid	BS	Association study of rs2745572 polymorphism in *FOXC1* with Primary Open Angel Glaucoma and Primary Angle-Closure Glaucoma in Pakistani population	Completed 2017
Supervisor	Injleen Hussain	BS	Association study of rs7137828 in *ATXN2* with Primary open angle glaucoma (POAG) and Primary angle closure glaucoma (PACG) in Pakistani population	Completed 2017
Supervisor	Umme-	BS	Association Study of Polymorphism rs2397084	Completed

	Kalsoom		in Exon 3 in IL17F with Urinary Bladder Cancer in Pakistani Population	2018
Supervisor	Maryam Anwar	BS	Association Study of Promoter Region SNP rs2275913 of *IL-17A* with Urinary Bladder Cancer in Pakistani Population	Completed 2018
Supervisor	Muhammad Usman	BS	Gathering Data on Underlying Common Molecular Mechanisms Involved in Age-related Macular Degeneration and Glaucoma.	Completed 2018
Supervisor	Aimen Irshad	BS	Role of MicroRNAs in Pathogenesis of Glaucoma	Completed 2019
Supervisor	Aqsa Zaheer	BS	Association Study of CX3CR1 Polymorphism rs3732379 with Age-Related Macular Degeneration in Pakistani Population	Completed 2020
Supervisor	Usama bin Imtiaz	BS	Association Study of CX3CR1 Polymorphism rs3732378 with Age-Related Macular Degeneration in Pakistani Population	Completed 2020

COURSES TAUGHT

Course Title	Students Feedback in %age
Health Biotechnology	95%
Immunology	95%
Molecular Genetics	80%
Enzymology	95%
Industrial Biotechnology	75%

REVIEWER OF INTERNATIONAL JOURNALS

World Academy of Science, Engineering and Technology

ABSTRACTS/PRESENTATIONS IN SYMPOSIA, CONFERENCES & WORKSHOPS:

1. **BICMAPE** First Science Conference from July 28 to July 29 held at COMSATS Institute of Information Technology, Abbottabad Campus
2. **1stposition** in poster competition held at COMSATS Institute of Information Technology, Abbottabad Campus on 28th to 29th July 2009.
3. **2nd course in "Eye Genetics"** organised in Bologna, Italy, from 28-09-2011 to 2-10-2011.
4. 11th Biennial Conference of Pakistan Society for Biochemistry and Molecular Biology "**Molecular Biosciences: Challenges and Opportunities**" 25th to 28th November 2013.
5. **4th International Glaucoma Conference**. 24th Feb 2018, Peshawar, Pakistan

AWARDS

1. Doctoral Fellowship Award (Tuition fee and monthly Stipend) via indigenous scholarship programme of HEC (2013-2015)
2. Doctoral Fellowship Award (Tuition fee and monthly stipend) via COMSATS University Islamabad (2009-2012)
3. International Research Support Initiative Programme award (2011)
4. COMSATS International research Fund for Research (2013)

REFERENCES

Dr. Raheel Qamar

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Dr. Anneke I. Den Hollandar

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