

Dr. Saima Zafar

University Medical Center Göttingen, Georg-August Universität

Department of Neurology, Prion Research Group

Clinical Dementia Center and DZNE

National Reference Center for TSE Surveillance

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Position Title:	Research Scientist and Ph.D. Supervisor
PhD award:	2011
Education:	Ph.D. in Biology
Research Interests	Dr. Saima Zafar directs a large interdisciplinary neuro-proteomics research projects primarily centered on understanding the patho-physiology of rapid progressive brain disorders such as Prion, Alzheimer's, and Parkinson's disease as well as the mechanisms underlying the early disease biomarkers and therapeutic targets of deep brain stimulation. I am serving as the principal investigator for both pre-clinical laboratory studies using animal models and clinical studies on human subjects/patients. Much of my work focuses on the ultimate translation of basic laboratory research discoveries into clinical treatment options for affected patients in order to reduce symptoms, minimize side effects and enhance function and quality of life. My impending research plans are to build on the foundations of new laboratories, skilled scientists in Pakistan to further develop early neurological disease biomarkers and detection of therapeutic targets in conjunction with government bodies, European funding supports and industrial interventions. I have significant collaborations with other experts in neurology as well as other disciplines such as neurosurgery, neuroscience, biomedical science and in addition to the medical industry to expedite and enhance new discoveries and their meaningful translation from "bench to bedside."
Achievements • Research	Total impact factor: <u>181.496</u> Total number of Publications : 41 National/ International Conference Papers: 28 Book chapters: 3

• Teaching • Secured Research Funding	High impact journals publications: • Nature- Cell Death Dis (2017) • Nature Protocol (2016) • Nature Genetics (2017- GWAS in Progress) • Alzheimers Dement. (2017) • Emerg Infect Dis (2014) Total number of M.Phil. and Ph.D Supervisions and evaluations: 19 • Ph.D supervision: 5 • MS Supervision: 5 • Ph.D co-supervision: 2 • Foreign M.Phil. and Ph.D. Thesis Evaluator and Examiner: 7 Total number of European and Canadian Research Grants: 6
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Brief Curriculum Vitae:

Research Scientist and PhD Supervisor | Neurology, George August University, Medical Center, Gottingen, Germany | 2011-Present

Direct supervision of. Ph.D and MS students for the identification and characterization of risk factors, modulators and therapeutic drug targets in neurodegenerated diseases.

Post-doctoral fellowship| Clinical Chemistry George August University, Medical Center, Gottingen, Germany | 2011

Applied mass spectrometry techniques to determine Kidney fibrosis and Mycophenolic acid

PhD. | George August University, Medical Center, Gottingen, Germany | 2007-2011

PhD Molecular biology, Department of Clinical Chemistry, Internal Medicine, University Medical Center Göttingen, Georg-August-University Göttingen, Germany, Thesis: ‘Cellular Prion protein: Identification and Characterization of Novel interacting partners’.

M.Phil. in Molecular biology | CEMB, University of Punjab, Lahore, Pakistan | 2005-2007

M.Phil. Molecular biology, CEMB, University of the Punjab, Lahore, Pakistan. Thesis: Effect of Small Interfering RNA against the p7 Gene of Hepatitis C Virus Genotype 1a.

MSc. in Zoology | University of Punjab, Lahore, Pakistan | 2004-2005

M.Sc. Zoology, Department of Zoology, University of the Punjab, Lahore, Pakistan. Thesis: Bacterial infection-mediated malignant cell transformation and involvement of bacteria in persistence and spread of cancer.

B.Sc (Hons.) in Zoology | University of Punjab, Lahore, Pakistan | 2000-2003

B.Sc (Hons.) Zoology, Department of Zoology, University of the Punjab, Lahore, Pakistan. Project report on shisham dieback, emphasize it's prevalence in the Quaid-e-Azam campus, university of the Punjab, Lahore, Pakistan.

Saima Zafar received her Ph.D. degree in Molecular biology from the Georg-August-University Goettingen, Germany in 2011 under the supervision of Prof. Dr. med. Uwe Groß (Director of the Institute for Medical Microbiology). Her thesis entitled "Cellular Prion protein: Identification and Characterization of Novel interacting partners" is centered on the further understanding of the unknown physiological function and interacting role of cellular form of Prion protein. She is currently working as a Ph.D supervisor for Clinical Proteomics and interactomics projects in the Prion and Dementia Research Group with Prof. Dr. Inga Zerr at the Clinical Dementia Center and DZNE, Department of Neurology, University Medical Center Goettingen, Germany. Her research interests include Genomics leading to Proteomics and interactomics based techniques within deeper understanding of molecular mechanisms and post-translational modifications by regulating the function and translocation of proteins involved in Alzheimer's, Parkinson's, degenerative dementia, Creutzfeldt-Jakob disease (CJD) diseases. Translational study in disease cell and animal models; Pre-clinical biomarkers identification; clinical interactomics and differential proteome alteration study; mass spectrometric analysis and confocal laser scanning approaches to uncover translational medicine propensity. The final ambition of her research is to disseminate and translate the novel findings of her projects to other research groups, physicians, end-product users, policy makers and industry.

Employment Details**Research Scientist and Principle investigator | Neurology, George August University, Medical Center, Gottingen, Germany | 2011- Present**

Employment Type: Research
Organization: Universitätsmedizin Göttingen (UMG)
Location: Neurology Dept. Universitätsmedizin Göttingen (UMG)
Job description: Supervise PhD, Ms and MBBS scholars, Fundings and grants involvements

Teaching Faculty Molecular Medicine Program | George August University, Medical Center, Gottingen, Germany | Jan. 2015- Present

Employment Type: Teaching
Organization: Universitätsmedizin Göttingen (UMG)
Location: Molecula medicine, Göttingen, Germany

Foreign Examiner (M. Phil) | University of Health Sciences (UHS) Lahore, Pakistan | Dec-2014 - Present

Employment Type: Professional
Organization: University of Health Sciences (UHS) Lahore
Location: University of Health Sciences (UHS) Lahore; Pakistan

Foreign Examiner (PhD) | King Edward Medical University Lahore, Pakistan | (Oct-2015 - Present

Employment Type: Professional
Organization: King Edward Medical University Lahore
Location: King Edward Medical University Lahore

Co-Supervisor (PhD) | National University of Sciences & Technology, Islamabad,

Pakistan | Sep-2014 - Present

Employment Type: Professional
 Organization: National University of Sciences & Technology, Islamabad
 Location: ASAB, National University of Sciences & Technology, Islamabad

Research collaborator | Department of Microbiology, Government College University, Faisalabad, Pakistan | NOV.-2015 - Present

Employment Type: Professional
 Organization: Department of Microbiology, Government College University
 Location: Department of Microbiology, Government College University Faisalabad (GCUF), Faisalabad, Pakistan

Fellowships and Awards:

2003	Gold Medal, Role of Honor, B.Sc (Hons.) Department of Zoology, University of the Punjab, Lahore, Pakistan
2000-2004	Merit Scholarship, University of the Punjab, Lahore, Pakistan
2004	Gold Medal, Role of Honor, M.Sc. Department of Zoology, University of the Punjab, Lahore, Pakistan
2007-2011	Ph.D. fellowship, 6th framework European Union (EU)-funded project, "Identification of potential biomarkers of CJD using STrePTM technology and proteomics".
2011	Post-Doctoral fellowship, DGKL-funding, "Kidney fibrosis and Mycophenolic acid"
2011	Post-Doctoral fellowship, Protecting the food chain from prions (Priority) European Union (EU) funded projects to evaluate the epidemiology and surveillance of CJD subtypes
2013-2016	Research grant- Helmholtz-Alberta Initiative-Infectious Diseases Research (HAI-IDR)
2013-2016	Research grant- Human prions – distinguishing sporadic from familial forms via structure and function – 201300024

Grants:

2016 – 2018	Physics-to Medicine initiative grant. Characterization of amyloid- β strains specific protein misfolding in Alzheimer's disease: Functional and clinical signature. Germany. (90.000 €)
2013 - 2018	APRI- Human prions – distinguishing sporadic from familial forms via structure and function – Antemortem Biomarkers of Prion Disease. Germany –Canada (187.500 €)
2013 - 2017	Helmholtz-Alberta Initiative-Infectious Diseases Research (HAI-IDR) 'Prion strains: Structure, tropism and host response'. Germany -Canada
2013	Equipment grant for High-resolution Spectral Confocal for Daily Research and Routine Examinations Leica TCS SPE, Biomarker based diagnosis of rapid progressive dementias - optimisation of diagnostic protocols, JPND. Germany (50.915 €)
2012-2014-	Biomarker-basierte Diagnose rapid progressiver Demenzen - Optimierung

Diagnostischer Protokolle (Demtest) BMBF. **Germany (560.712 €)**

2012-2014- Joint call on neurodegenerative diseases-Biomarker based diagnosis of rapid progressive dementias JPND. **Europe –Germany (226.800 €)**

Professional Activities:

Associate Editor Journal of Alzheimer's Disease (Designated for the year 2018)

Editorial Board Member Journal, Archives of Biomedical Research

Memberships The Protein Society (TPS)

Memberships Creutzfeldt-Jakob Disease Foundation (CJD), human prion diseases.

Teaching and Supervision Activities:

Ph.D. students

- Amandeep Singh Arora march2011-march 2015 Finished
- Waqas Tahir. July 2012-january2016-Finished
- Mohsin Shafiq September 2013
- Neelam younas January 2015
- Aneeqa August 2016
- Uzma Malik, January 2016 (NUST, ISB, Pakistan exchange student)

Master students

- Mathew Johnson August 2016 Finished (Alberta, Canada exchange student)
- Christien Dykstra july 2017 (Alberta, Canada exchange student)
- Mohsin Shafiq 2011-2013 Finished
- Neelam younas 2012-2014 Finished
- Susana Correia 2014-2015 Finished

Prion Research Group, Dementia Research Unit, National Reference Center for TSE Surveillance, Department of Neurology, Georg-August University, Göttingen, Germany.

Teaching Molecular medicine program: 2014-till

Ph.D. Co-supervisor, National University of Sciences and Technology (NUST) Islamabad, Pakistan

- Uzma Malik, PhD Scholar
- Sanila Amber, PhD Scholar

Foreign M.Phil. and Ph.D. Thesis Evaluator and Examiner:

- Shoaib Ahmed, 2014, University of Health Sciences, Lahore
- Dr. Nasir Raza Zaidi, Ph.D 2015, Diagnostic Radiology, King Edward Medical University, Lahore, Pakistan.
- Dr. Maria Gill, M.Phil. 2015, University of Health Sciences, Lahore
- Zia Ullah, 2015, University of Health Sciences, Lahore
- Dr. Roheen Shakeel. 2016, University of Health Sciences, Lahore
- Dr. Alamzeb Jadoon, 2016, University of Health Sciences, Lahore
- Dr. Hira Sohail, 2017, University of Health Sciences, Lahore

Key Recent Publications:

2018

- Llorens F, Thüne K, Martí E, Kanata E, Dafou D, Díaz-Lucena D, Vivancos A, Shomroni O, **Zafar S**, Schmitz M, Michel U, Fernández-Borges N, Andréoletti O, Del Río JA, Díez J, Fischer A, Bonn S, Sklaviadis T, Torres JM, Ferrer I, Zerr I. Regional and subtype-dependent miRNA signatures in sporadic Creutzfeldt-Jakob disease are accompanied by alterations in miRNA silencing machinery and biogenesis. *PLoS Pathog.* 2018 Jan 22;14(1):e1006802. doi:10.1371/journal.ppat.1006802. eCollection 2018 Jan. PubMed PMID: 29357384.

2017

- **Zafar S**, Behrens C, Dihazi H, Schmitz M, Zerr I, Schulz-Schaeffer WJ, Ramljak S, Asif AR. Cellular prion protein mediates early apoptotic proteome alternation and phospho-modification in human neuroblastoma cells. *Nature- Cell Death Dis.* 2017 Jan 19;8(1):e2557. doi: 10.1038/cddis.2016.384.
- Zerr I, **Zafar S**, Schmitz M, Llorens F. Cerebrospinal fluid in Creutzfeldt-Jakob disease. *Handb Clin Neurol.* 2017;146:115-124. doi:10.1016/B978-0-12-804279-3.00008-3. PubMed PMID: 29110766.
- **Zafar S**, Shafiq M, Younas N, Schmitz M, Ferre I, Zerr I, Prion protein interactome: identifying novel targets in slowly and rapidly progressive forms of Alzheimer's disease, *J Alzheimers Dis.* 2017;59(1):265-275. doi: 10.3233/JAD-170237.
- **Zafar S**, Younas N, Sheikh N, Tahir W, Shafiq M, Schmitz M, Ferre I, Andréoletti O, Zerr I, Cytoskeleton associated risk modifiers involved in early and rapid progression of sporadic Creutzfeldt-Jakob disease. *Mol Neurobiol.* 2017, *Mol Neurobiol.* 2017 Jun 1. doi: 10.1007/s12035-017-0589-0. [Epub ahead of print]
- **Zafar S**, Younas N, Correia S, Shafiq M, Tahir W, Schmitz M, Ferrer I, Andréoletti O, Zerr I. Strain-Specific Altered Regulatory Response of Rab7a and Tau in Creutzfeldt-Jakob Disease and Alzheimer's Disease. *Mol Neurobiol.* 2017 Jan;54(1):697-709. doi: 10.1007/s12035-016-9694-8. Epub 2016 Jan 14. PubMed PMID: 26768426.
- Llorens F, Kruse N, Schmitz M, Gotzmann N, Golanska E, Thüne K, Zejneli O, Kanata E, Knipper T, Cramm M, Lange P, **Zafar S**, Sikorska B, Liberski PP, Mitrova E, Varges D, Schmidt C, Sklaviadis T, Mollenhauer B, Zerr I. Evaluation of α -synuclein as a novel cerebrospinal fluid biomarker in different forms of prion diseases. *Alzheimers Dement.* 2017 Jun;13(6):710-719. doi: 10.1016/j.jalz.2016.09.013. Epub 2016 Nov 18. PubMed PMID: 27870938.
- Khan Z, Rehman A, Nisar MA, **Zafar S**, Zerr I. Biosorption behavior and proteomic analysis of Escherichia coli P4 under cadmium stress. *Chemosphere.* 2017 May;174:136-147. doi: 10.1016/j.chemosphere.2017.01.132. Epub 2017 Jan 27. PubMed PMID: 28161514.
- Ahmed S, Mahmood Z, Javed A, Hashmi SN, Zerr I, **Zafar S**, Zahid S. Effect of Metformin on Adult Hippocampal Neurogenesis: Comparison with Donepezil and Links to Cognition. *J Mol Neurosci.* 2017 Apr 4. doi: 10.1007/s12031-017-0915-z. [Epub ahead of print] PubMed PMID: 28378260.
- Llorens F, Thüne K, Sikorska B, Schmitz M, Tahir W, Fernández-Borges N, Cramm M, Gotzmann N, Carmona M, Streichenberger N, Michel U, **Zafar S**, Schuetz AL, Rajput A, Andréoletti O, Bonn S, Fischer A, Liberski PP, Torres JM, Ferrer I, Zerr I. Altered Ca(2+)

homeostasis induces Calpain-Cathepsin axis activation insporadic Creutzfeldt-Jakob disease. *Acta Neuropathol Commun.* 2017 Apr 27;5(1):35.doi: 10.1186/s40478-017-0431-y. PubMed PMID: 28449707; PubMed Central PMCID:PMC5408381.

- Llorens F, Kruse N, Karch A, Schmitz M, **Zafar S**, Gotzmann N, Sun T, Köchy S, Knipper T, Cramm M, Golanska E, Sikorska B, Liberski PP, Sánchez-Valle R, Fischer A, Mollenhauer B, Zerr I. Validation of α -Synuclein as a CSF Biomarker for Sporadic Creutzfeldt-Jakob Disease. *Mol Neurobiol.* 2017 Mar 21. doi: 10.1007/s12035-017-0479-5. [Epub ahead of print] PubMed PMID: 28321768.
- Garcia-Esparcia P, López-González I, Grau-Rivera O, García-Garrido MF, Konetti A, Llorens F, **Zafar S**, Carmona M, Del Rio JA, Zerr I, Gelpi E, Ferrer I. Dementia with Lewy Bodies: Molecular Pathology in the Frontal Cortex in Typical and Rapidly Progressive Forms. *Front Neurol.* 2017 Mar 13;8:89. doi: 10.3389/fneur.2017.00089. eCollection 2017. PubMed PMID: 28348546; PubMed Central PMCID: PMC5346561.

2016

- **Zafar S**, Tahir W, Llorens F, Arora AS, Thüne K, Schmitz M, Gotzmann N, Kruse N, Mollenhauer B, Torres JM, Andréoletti O, Ferrer I, Zerr I. Molecular Alterations in the Cerebellum of Sporadic Creutzfeldt-Jakob Disease Subtypes with DJ-1 as a Key Regulator of Oxidative Stress. *Mol Neurobiol.* 2016 Dec 14. [Epub ahead of print] PubMed PMID: 27975168.
- **Zafar S**, Younas N, Zerr I Novel Biomarkers and the diagnosis of Prion diseases'(2016) journal of Molecular Biomarkers & Diagnosis.
- Schmitz M, Llorens F, Pracht A, Thom T, Correia Â, **Zafar S**, Ferrer I, Zerr I. Regulation of human cerebrospinal fluid malate dehydrogenase 1 in sporadic Creutzfeldt-Jakob disease patients. *Aging (Albany NY).* 2016 Nov 14;8(11):2927-2935. doi: 10.18632/aging.101101. PubMed PMID: 27852982; PubMed Central PMCID: PMC5191879.
- Schmitz M, Cramm M, Llorens F, Müller-Cramm D, Collins S, Atarashi R, Satoh K, Orrù CD, Groveman BR, **Zafar S**, Schulz-Schaeffer WJ, Caughey B, Zerr I. The real-time quaking-induced conversion assay for detection of human prion disease and study of other protein misfolding diseases. *Nature Protoc.* 2016 Nov;11(11):2233-2242. doi: 10.1038/nprot.2016.120. Epub 2016 Oct 13. PubMed PMID: 27735933.
- Karch A, Llorens F, Schmitz M, Arora AS, **Zafar S**, Lange P, Schmidt C, Zerr I. Stratification by Genetic and Demographic Characteristics Improves Diagnostic Accuracy of Cerebrospinal Fluid Biomarkers in Rapidly Progressive Dementia. *J Alzheimers Dis.* 2016 Oct 18;54(4):1385-1393. PubMed PMID: 27589519.
- Schmitz M, Cramm M, Llorens F, Candelise N, Müller-Cramm D, Varges D, Schulz-Schaeffer WJ, **Zafar S**, Zerr I. Application of an in vitro-amplification assay as a novel pre-screening test for compounds inhibiting the aggregation of prion protein scrapie. *Sci Rep.* 2016 Jul 7;6:28711. doi: 10.1038/srep28711. PubMed PMID: 27385410; PubMed Central PMCID: PMC4935936.

2015

- **Zafar S**, Schmitz M, Younus N, Tahir W, Shafiq M, Llorens F, Ferrer I, Andréoletti O, Zerr I. Creutzfeldt-Jakob disease subtype specific regional and temporal regulation of ADP ribosylation factor-1 dependent Rho/MLC pathway at pre-clinical stage. *J Mol Neurosci.* 2015 Jun;56(2):329-48.
- Arora AS, **Zafar S**, Kollmar O, Llorens F, Tahir W, Vanselow S, Kumar P, Mj S, Schmitz M, Zerr I. Application of Capillary immuno-electrophoresis revealed an age and gender dependent regulated expression of PrPC in liver. *Electrophoresis.* 2015 Sep 17. doi:

10.1002/elps.201500244. [Epub ahead of print] PMID: 26377521

- Llorens F, Kruse N, Schmitz M, Shafiq M, da Cunha JE, Gotzman N, **Zafar S**, Thune K, de Oliveira JR, Mollenhauer B, Zerr I. Quantification of CSF biomarkers using an electrochemiluminescence-based detection system in the differential diagnosis of AD and sCJD. *J Neurol*. 2015 Jul 11. [Epub ahead of print] PubMed PMID: 26162713.
- Schmitz M, Hermann P, Oikonomou P, Stoeck K, Ebert E, Poliakova T, Schmidt C, Llorens F, **Zafar S**, Zerr I. Cytokine profiles and the role of cellular prion protein in patients with vascular dementia and vascular encephalopathy. *Neurobiol Aging*. 2015 Sep;36(9):2597-606. doi: 10.1016/j.neurobiolaging.2015.05.013. Epub 2015 Jun 11. PubMed PMID: 26170132.
- André Karch, Peter Hermann, Claudia Ponto, Matthias Schmitz, Amandeep Arora, **Zafar S**, Franc Llorens, Annika Müller-Heine, Inga Zerr, Cerebrospinal fluid tau levels are a marker for molecular subtype in sporadic Creutzfeldt-Jakob disease *Neurobiol Aging*. 2015 May;36(5):1964-8
- Cramm M, Schmitz M, Karch A, **Zafar S**, Varges D, Mitrova E, Schroeder B, Raeber A, Kuhn F, Zerr I. Characteristic CSF Prion Seeding Efficiency in Humans with Prion Diseases. *Mol Neurobiol* 2015;51(1):396-405.

2014

- Douet JY, **Zafar S**, Perret-Liaudet A, Lacroux C, Lugan S, Aron N, Cassard H, Ponto C, Corbiere F, Torres JM, Zerr I, Andreoletti O. Detection of infectivity in the blood of vCJD and sCJD affected patients. *Emerg Infect Dis*. 2014 Jan;20(1):114-7. doi: 10.3201/eid2001.130353.
- **Zafar S**, Asif AR, Ramljak S, Tahir W, Schmitz M, Zerr I. Anchorless 23-230 PrP(C) Interactomics for Elucidation of PrP(C) Protective Role. *Mol Neurobiol* 2014;49(3):1385-99.
- Llorens F, Lopez-Gonzalez I, Thune K, Carmona M, **Zafar S**, Andreoletti O, Zerr I, Ferrer I. Subtype and regional-specific neuroinflammation in sporadic creutzfeldt-jakob disease. *Front Aging Neurosci* 2014;6:198.
- Llorens F, **Zafar S**, Ansoleaga B, Shafiq M, Blanco R, Carmona M, Grau-Rivera O, Nos C, Gelpi E, Del Rio JA, Zerr I, Ferrer I. Subtype and regional regulation of prion biomarkers in sporadic Creutzfeldt-Jakob disease. *Neuropathol Appl Neurobiol* 2014.
- Schmitz M, Lullmann K, **Zafar S**, Ebert E, Wohlhage M, Oikonomou P, Schlomm M, Mitrova E, Beekes M, Zerr I. Association of prion protein genotype and scrapie prion protein type with cellular prion protein charge isoform profiles in cerebrospinal fluid of humans with sporadic or familial prion diseases. *Neurobiol Aging* 2014;35(5):1177-88.
- Schmitz M, Wulf K, Signore SC, Schulz-Schaeffer WJ, Kermer P, Bahr M, Wouters FS, **Zafar S**, Zerr I. Impact of the cellular prion protein on amyloid-beta and 3PO-tau processing. *J Alzheimers Dis* 2014;38(3):551-65.
- Schmitz M, **Zafar S**, Silva CJ, Zerr I. Behavioral abnormalities in prion protein knockout mice and the potential relevance of PrP(C) for the cytoskeleton. *Prion* 2014;8(6):381-6.

2011-2013

- Llorens F, Ansoleaga B, Garcia-Esparcia P, **Zafar S**, Grau-Rivera O, Lopez-Gonzalez I, Blanco R, Carmona M, Yague J, Nos C, Del Rio JA, Gelpi E, Zerr I, Ferrer I. PrP mRNA and protein expression in brain and PrP(c) in CSF in Creutzfeldt-Jakob disease MM1 and VV2. *Prion* 2013;7(5):383-93.
- **Zafar S**, Zerr I. Kinase (Protein Kinases). *Encyclopedia of Genetics*, 2nd edition: Elsevier Ltd. 2012
- **Zafar S**, Asif AR, Ramljak S, Tahir W, Schmitz M, Zerr I. Structural consequences of native post-translational modifications of the prion protein:

A mechanism for toxicity. Prion 7(81–104)

- **Zafar S**, von AN, Oellerich M, Zerr I, Schulz-Schaeffer WJ, Armstrong VW, Asif AR. Proteomics Approach to Identify the Interacting Partners of Cellular Prion Protein and Characterization of Rab7a Interaction in Neuronal Cells. J Proteome Res 2011.

Key Published Abstracts and Presentations:

- **Zafar S**, *et al.*, Zerr I. Risk modifiers tangled in rapid progression of Alzheimer's disease. Prion 2017, Edinburgh, Scotland, UK.
- **Zafar S**, *et al.*, Zerr I. Proteomic Approaches to Identify the Mechanism of rapid progression of Alzheimer's Disease, European Proteomics Association (EuPA) HUPO2017 Dublin, Ireland.
- **Zafar S**, *et al.*, Zerr I. Proteomic and Alzheimer's Disease: novel approaches to classify the Mechanism of rapid progression, 4th World Congress on Mass Spectrometry, 2017, London, UK
- **Zafar S**, and Shafiq M, *et al.*, Zerr I. The prion protein interactome: identifying novel targets in rapidly progressive Alzheimer's disease. Prion 2016, Tokyo, Japan.
- **Zafar S**, *et al.*, Zerr I. CJD : a pre-symptomatic, subtype specific regional and temporal characterization. Prion 2015, Fort Collins, Colorado, USA
- Shafiq M, Llorens F, **Zafar S**, Zerr I. Alpha-Synuclein: A potential Cerebrospinal fluid biomarker for differentiation of CJD from AD. Prion 2015, Fort Collins, Colorado, USA
- Tahir W, **Zafar S** *et al.*, Zerr I. Characterization of differential proteome expression of MM1 and VV2 subtypes of sporadic Creutzfeldt-Jakob disease (sCJD) in Cerebellum Fort Collins, Colorado, USA.
- **Zafar S**, Oellerich M, Schulz-Schaeffer WJ, Zerr I, Asif AR. Interactive role of Arf1 and Alpha tubulin-1 protein during the intracellular transportation of PrP^C. Published in Abstract Book of International conference of Prion 2012 Amsterdam, Netherlands, 2012.
- Singh AA; **Zafar S**, Zerr I, Gender and PrPC dependent expression pattern of Tau, P-Tau and APP in the liver of PrPC knockout mice. Published in Abstract Book of International conference of Prion 2012 Amsterdam, Netherlands, 2012.
- **Zafar S**, Ahsen NV, Oellerich M, Schulz-Schaeffer WJ, Armstrong VW, Asif AR, Human cellular prion protein (PrP^C): Human Cellular Prion Protein (PrP^C): Identification of Novel Interacting Partners & Characterization in association with endosome and microtubules. 2010.
- **Zafar S**, Asif AR., Armstrong VW, Oellerich M, Human cellular prion protein (PrP^C): Distribution and co-localization with early endosome in a neuronal cell line, Clinical chemistry and laboratory medicine, 2009; 47(9):A63.
- **Zafar S**, Asif AR., Armstrong VW, Oellerich M, Molecular interaction of human Prion protein and cytoskeleton associated proteins. Published in Abstract Book of International conference of Prion 2009 Thessaloniki-Chalkidiki, Greece, 2009.
- **Zafar S**, Asif AR., Armstrong VW, Oellerich M, One-STrEP-tagged human prion protein expression, purification, localization and identification of interacting proteins in mammalian cell line, Clinical chemistry and laboratory medicine, 2008; 46(9):A175.
- **Zafar S**, Epidemiological Evaluation and Surveillance Priority meeting 25TH June, 2014, Brussel, 2014 Belgium
- **Zafar S** Human prions – distinguishing sporadic from genetic forms via structure and function HAI meeting 27TH May, 2014, Trieste, Italy
- **Zafar S** Anchorless 23-230 PrPC interactomics 18 TH September, 2013, Göttingen, Germany
- **Zafar S** Proteomics and Interactomics – Approaches to Novel Biomarkers DEMTEST 05 TH September, 2013, Göttingen, Germany
- **Zafar S**, Characterization of time-dependant evolution of brain and blood proteomes from MM1-and VV2-infected Met129 and Val129 mice 04TH June, 2013, DZNE meeting,

Göttingen, Germany

- **Zafar S** ZNE-GBA study: Markers in GBA-associated PD (MIGAP) -early detection, progression, mechanisms, protection 18TH April, 2013, NGFN meeting, Tübingen, Germany
- **Zafar S** Proteomics and Interactomics – Approaches to Novel Biomarkers DEMTEST. 25 th August, 2012, JPND meeting, Hannover, Germany
- **Zafar S** Biomarker based diagnosis of rapid progressive dementias-optimisation of diagnostic protocols- DEMTEST. 24th August, 2012, JPND meeting, Hannover, Germany.
- **Zafar S** Proteomics to Genomics: Involvement of Peripheral organs In Tauopathies and Prionopathies. 1 st june, 2012, KNDD meeting, Würzburg, Germany
- **Zafar S** Interactive role of Arf1 and alpha tubulin-1 with cellular prion protein transportation in neuronal cells. 10th Feb, 2012 National Reference Center for TSEs Surveillance, Goettingen, Germany
- **Zafar S** Protecting the food chain from prions: shaping European priorities through basic and applied research. 15TH September, 2011, Priority International Conference/Consortium, National Reference Center for TSEs Surveillance, Goettingen, Germany.
- **Zafar S** Proteomics Approach to Identify the Interacting Partners of Cellular Prion Protein and Characterization of Rab7a Interaction in Neuronal Cells. 12TH August, 2011, National Reference Center for TSEs Surveillance, Goettingen, Germany
- **Zafar S** Intracellular transportation of PrPC : interactive role of Arf1 and Alpha tubulin-1 proteins. 10TH February, 2012, National Reference Center for TSEs Surveillance, Goettingen, Germany.
- **Zafar S** Characterization of time-dependant evolution of brain and blood proteome alterations induced by various sCJD strains. 15TH September, 2011, Priority International Conference, National Reference Center for TSEs Surveillance, Goettingen, Germany.
- **Zafar S** Proteomics Approach to Identify the Interacting Partners of Cellular Prion Protein and Characterization of Rab7a Interaction in Neuronal Cells. 12TH August, 2011, National Reference Center for TSEs Surveillance, Goettingen, Germany.
- **Zafar S** Human cellular prion protein (PrPC): Human Cellular Prion Protein (PrPC):Identification of Novel Interacting Partners & Characterization in association with endosome and microtubules. 17st October, 2010, Goettinger Transporttage. Conference Goettingen, Germany.
- **Zafar S** Cellular Prion protein (PrPC): Localization & Identification of Interacting Proteins using STrePTM technology and proteomics. 4 -5 th June, 2009, 6th Meeting (Prion screen project- Development of a blood screening assay for diagnosis of prion, diseases in humans), Berlin, Germany.
- **Zafar S** Human cellular prion protein (PrPC): Distribution and colocalization with early endosome in a neuronal cell line". 5th. Jahrestagung der DGKL Deutsche Vereinte Gesellschaft für Klinische Chemie und Laboratoriumsmedizin, Mannheim, Germany.
- **Zafar S** Molecular interaction of human Prion protein and cytoskeleton associated proteins". The international conference "Prion 2009" Chalkidiki, Greece.
- **Zafar S** Cellular Prion protein (PrPC): Localization & Identification of Interacting Proteins using STrePTM technology and proteomics. 21st September, 2009, 5th Meeting (Prion screen project- Development of a blood screening assay for diagnosis of prion, diseases in humans), Thessaloniki, Greece.
- **Zafar S** Cellular Prion protein (PrPC): Localization & Identification of Interacting Proteins using STrePTM technology and proteomics.2009, 3rd Meeting (Prion screen project-), Göttingen, Germany.
- **Zafar S** Comparative analysis, cellular localization & functional characterization of proteins interacting with normal and variant prion proteins. 25th March, 2009, University Medical Centre of Göttingen, Göttingen, Germany
- **Zafar S** Cellular Prion protein (PrPC): Expression, Purification, Localization & Identification of Interacting Proteins18th February, 2009, Department of Clinical Chemistry Georg-August-University, University Medical Centre of Göttingen, Göttingen, Germany.
- **Zafar S** Identification of potential biomarker of CJD using STreP technology and proteomics-an introduction. 28th January, 2009, Clinical Chemistry Georg-August-

University, Göttingen, Germany.

- **Zafar S** One-STrEP-tagged human prion protein expression, purification, localization and identification of interacting proteins in mammalian cell line". 20086 th.Jahrestagung der DGKL Deutsche Vereinte Gesellschaft für Klinische Chemie und Laboratoriumsmedizin, Leipzig, Germany.
- **Zafar S** One-STrEP-tagged human Prion protein expression, purification, and localization in mammalian cell line, 29th August, 2008, 3rd Meeting (Prion screen project Development of a blood screening assay for diagnosis of prion, diseases in humans), 2008 Bratislava, Slovakia.
- **Zafar S** Cloning of Human Prion protein with One Strep TM-tag, site directed Mutagenesis and Expression analysis in HEK293 and HpL3-4 cell lines. 14th January, 2008, 2nd Meeting (Prion screen project- Development of a blood screening assay for diagnosis of prion diseases in humans), Krakow, Poland.
- **Zafar S** Comparative analysis, Cellular localization & Functional characterization of proteins interacting with Normal and Variant Prion Protein. 17th June, 2007, Clinical Chemistry Georg-August-University, Göttingen, Germany.

Key Conferences /Symposia Workshops:

- 2017** Prion 2017 Congress Edinburgh International Conference Deciphering Neurodegenerative diseases Edinburgh, Scotland, UK
- 2017** Proteomic Forum 2017. Annual meeting of the German Society for Proteome Research 2–5 April 2017 Potsdam, Germany.
- 2017** 4th World Congress on Mass Spectrometry, 2017, London, UK
- 2014** Epidemiological Evaluation and Surveillance Priority meeting 25TH June, 2014, Brussel, Belgium
- 2014** Human prions – distinguishing sporadic from genetic forms via structure and function HAI meeting 27TH May, 2014, Trieste, Italy
- 2013** KNDD project meeting, Bonn Germany December 9-10.
- 2013** DZNE retreat Neurology research, Bad hertz mountain Germany September 18-19.
- 2013** Neurology research meeting, Bad sodden Germany September 6-8.
- 2013** JPND project meeting Barcelona Spain, September 3-5 .
- 2013** Workshop- Light sheet microscopy hand on experience-GZMB-Göttingen, Germany 27 june 2013.
- 2013** International conference "Prion 2013" Alberta, Canada, May 09-12
- 2013** Conference, Functional Genomics of Parkinson"s. Disease and beyond April 18-20, 2013, Tübingen, Germany.
- 2013** Congress Neurobiology March 13-16, 2013, Göttingen, Germany.
- 2013** Tonsil Biopsy meeting, Edinburgh, Scotland, 30-31st January 2013.
- 2012** International conference "Prion 2012" Amsterdam, Netherlands May 09-12
- 2012** International Symposium on"Biological and Translation Aspects of Neurodegeneration" Venice - Italy March 12-14
- 2011** 2nd Meeting (priority consortium seventh framework programme)"Fork-to-farm: Food (including seafood), health and well-being" Protecting the food chain from prions: shaping European priorities through basic and applied research, Goettingen Germany 15-16. September
- 2011** International Conference on Alzheimer's Disease (ICAD); Paris, France. July 16-21
- 2011** Jahrestagung der sektion molekular diagnostik der DGKL Deutsche Vereinte

	Gesellschaft für Klinische Chemie und Laboratoriumsmedizin, Tutzing / Munich, Germany, May 19-20.
2011	5 th Symposium of the Göttingen Proteomics Forum "Advances in Bioanalytical Mass Spectrometry, Max-Planck-Institute for Experimental Medicine Göttingen, Germany.
2010	Goettinger Transporttage. Conference Goettingen October 15-17.
2010	Protein Trafficking in Health and Disease. Conference Hamburg May 26-28.
2010	Stem Cell –Tumor-Proteomics conference Hamburg February 5-6.
2009	The international conference "Prion 2009" Chalkidiki, Greece .
2009	5 th Meeting (Prion screen project- Development of a blood screening assay for diagnosis of prion, diseases in humans), Thessaloniki, Greece.
2009	4 th Symposium of the Göttingen Proteomics Forum "Advances in Bioanalytical Mass Spectrometry, Max-Planck-Institute for Experimental Medicine Göttingen, Germany.
2009	6 th . Jahrestagung der DGKL Deutsche Vereinte Gesellschaft für Klinische Chemie und Laboratoriumsmedizin, Mannheim, Germany.
2009	4 th Meeting (Prion screen project- Development of a blood screening assay for diagnosis of prion, diseases in humans), Göttingen, Germany
2008	3 rd Symposium of the Göttingen Proteomics Forum "Advances in Bioanalytical Mass Spectrometry, Max-Planck-Institute for Experimental Medicine Göttingen, Germany.
2008	5 th . Jahrestagung der DGKL Deutsche Vereinte Gesellschaft für Klinische Chemie und Laboratoriumsmedizin, Mannheim, Germany.
2008	3 rd Meeting (Prion screen project- Development of a blood screening assay for diagnosis of prion, diseases in humans), Bratislava, Slovakia
2008	2 nd Meeting (Prion screen project- Development of a blood screening assay for diagnosis of prion diseases in humans), Krakow, Poland
2007	2 nd Symposium of the Göttingen Proteomics Forum "Advances in Bioanalytical Mass Spectrometry, Max-Planck-Institute for Experimental Medicine Göttingen, Germany.
2006	Lahore Bio-Forum 2006, The Twin Center for Molecular Biology, CEMB, University of the Punjab, Lahore – Pakistan.

Professional Training

Course	Diploma/Certificate	Field of study	Institution
RNAseq data analysis	RNAseq data analysis	<u>Neurology</u>	Zentrum Informatik, Statistik und Epidemiologie Institut für Medizinische Statistik
Tonsil Biopsy meeting,	Human/animal Tonsil Biopsy Training	<u>Infectious study</u>	University of Edinburgh, Edinburgh, Scotland 30-31st January 2013

	Light sheet microscopy hand on experience-	Light sheet microscopy hand on experience	<u>Neurology</u>	Georg-August-University, GZMB-Göttingen, Germany
	Advances in Bioanalytical Mass Spectrometry	Advances in Bioanalytical Mass Spectrometry	<u>Clinical Chemistry</u>	Max-Planck-Institute for Experimental Medicine Göttingen, Germany
	Stem Cell – Tumor-Proteomics	Stem Cell –Tumor-Proteomics	<u>Proteomics</u>	Hamburg February

Languages

English; German; Urdu; Punjabi

Countries Visited

Austria, Belgium, Czech Republic, China, France, Greece, Germany, Holland, Italy, Poland, Slovak Republic, Switzerland, Scotland, Spain, UAE, United Kingdom.

*Full Publications and Abstracts on request

*References on request