

Rizwan Qaisar



PERSONAL INFORMATION

Present Address: Department of Basic Medical Sciences, College of Medicine, University of Sharjah,
Date of Birth: 05-05-1982
Nationality: Pakistani
Resident ship: US Green Card
Passport No: BV4916444
E-mail: rqaisar@sharjah.ac.ae / rizzzq@gmail.com
Cell: +971-50-8675702

EDUCATION & Research

Jan 2019 – to date Assistant Professor, College of Medicine, University of Sharjah, Sharjah UAE
July 2018 – Jan 2019 Research Assistant Member, Oklahoma Medical Research Foundation (OMRF).
Oklahoma, USA.
2014 - 2018 Post-doctorate, Oklahoma Medical Research Foundation (OMRF). Oklahoma, USA
2012 – 2014 Post-doctorate from Dept. of Molecular Medicine, University of Pavia, Pavia Italy
2008 – 2012 PhD in Muscle Physiology, Dept. of Clinical Neurophysiology, University of
Uppsala, Uppsala Sweden.
1999 – 2005 MBBS (Bachelor of Medicine & Surgery), Khyber Medical College, University of
Peshawar, Peshawar Pakistan,

RESEARCH INTERESTS

Skeletal muscle biology, Aging, sarcoplasmic reticulum, excitation-contraction coupling,
neuromuscular junction, oxidative stress, single muscle fibers, regulation of muscle contraction,
muscle nuclei, satellite cells, mitochondria.

RESEARCH SKILLS

Confocal & fluorescence microscopy.
Single muscle fiber contractile properties
Muscle contraction and biomechanics
HPLC
Nerve Conduction velocity
Mitochondrial oxygen consumption
Enzyme Kinetics
Cell culture
PCR
Western blot / Gel Electrophoresis

HONORS & AWARDS

Awarded the Irene Diamond fund/AFAR Post-doctoral Transition Award in Aging by the American Federation for Aging Research (AFAR).

Awarded the scholarship for 4 years PhD program in muscle physiology. This scholarship was awarded by the Higher Education Commission (HEC), Government of Pakistan to study at the University of Uppsala in Sweden.

Member - American Association of Aging

TRAININGS & COURSES.

NIA summer training course, June 2018, Buck Institute, Novato CA, USA,

Medical Epidemiology (1 week), 2012, University of Uppsala, Sweden

Introduction to doctoral studies & scientific research (5 weeks), 2010, University of Uppsala, Sweden

Immune, gene and cell therapy (2 weeks), 2009, University of Uppsala, Sweden

Digital Imaging System (3 weeks), 2009, University of Uppsala, Sweden

Confocal microscopy (1 week), 2009, University of Uppsala, Sweden

Worked as junior internee doctor in General Surgery & Cardiology (6 months each), 2006-07, Lady Reading Hospital, Peshawar, Pakistan

RESEARCH THESIS

PhD Thesis (Medical Sciences): "Myonuclear Organization and Regulation of Muscle Contraction in Single Muscle Fibers; Effects of Aging, Gender, Species, Endocrine Factors and Muscle Size".
University of Uppsala, Sweden. (March 2012)

Supervisor; Lars Larsson

Co-Supervisor; Julien Ochala

CURRENT POSITION

Working as an Assistant Professor of Physiology in the College of Medicine, University of Sharjah. Currently my academic duties include teaching and mentoring undergraduate medical students. I am also actively involved in conducting and supervising research focused on novel therapeutic interventions to combat disuse atrophy in skeletal muscle.

LIST OF PUBLICATIONS (CHRONOLOGICAL ORDER)

For my profile on Google Scholar, please click [here](#).

1. Redox Biol J, 2018 Sep 27;20:68-74. Doi: 10.1016/j.redox.2018.09.018 [Epub ahead of print]
Restoration of SERCA ATPase to prevent oxidative stress-related muscle atrophy and weakness.
Qaisar R, Bhaskaran S, Ranjit R, Natarajan KS, Premkumar P, Huseman K, Van Remmen H
2. J Cachexia Sarcopenia Muscle. 2018 Aug 2. Doi: 10.1002/jcsm. 12339. [Epub ahead of print]
Oxidative stress-induced dysregulation of excitation-contraction coupling contributes to muscle weakness.
Qaisar R, Bhaskaran S, Premkumar P, Ranjit R, Natarajan KS, Ahn B, Riddle K, Claflin DR, Richardson A, Brooks SV, Van Remmen H
2. Free Radic Biol Med. 2017 Nov; 112:48-49. Doi: 10.1016/j.freeradbiomed.2017.10.063.

Inducible motor neuron specific deletion of CuZn Superoxide dismutase accelerates muscle atrophy in mice.

Bhaskaran S, Li H, Ahn B, Piekarz K, Ranjit R, **Qaisar R**, Premkumar P, Forbes B, Riddle K, Richardson A, Van Remmen H.

3. Free Radic Biol Med. 2017 April 26; 108:704-714. Doi: 10.1016/j.freeradbiomed.2017.04.028. PMID: 28455142

A fish oil diet induces mitochondrial uncoupling and mitochondrial unfolded protein response in epididymal white adipose tissues of mice.

Bhaskaran S, Unnikrishnan A, Ranjit R, **Qaisar R**, Pharaoh G, Matyi S, Kinter M, Deepa SS.

4. Diabetes. 2016 Dec;65(12):3585-3597. Epub 2016 Sep 27.

Enhanced GLUT-4Dependent Glucose Transport Relieves Nutrient Stress in Obese Mice Through Changes in Lipid and Amino Acid Metabolism.

Gurley JM, Illayeva O, Jackson RM, Griesel BA, White P, Mastuzaki S, **Qaisar R**, Van Remmen H, Humphries KM, Newgard CB, Olson AL.

5. Free Radic Biol Med. 2016, Doi: 10.1016/j.freeradbiomed.2016.03.25

Muscle fiber type diversification during exercise and regeneration.

Qaisar R*, Bhaskaran S, Van Remmen H.

6. Free Radic Biol Med. 2016 Feb;91:281-92. Doi: 10.1016/j.freeradbiomed.2015.12.021. Epub 2015 Dec 23. PMID: 26721594

Down-regulation of the mitochondrial matrix peptidase ClpP in muscle cells causes mitochondrial dysfunction and decreases cell proliferation.

Deepa SS, Bhaskaran S, Ranjit R, **Qaisar R**, Nair BC, Liu Y, Walsh ME, Fok WC, Van Remmen H.

7. Aging Cell. 2015 Dec;14(6):957-70. Doi: 10.1111/ace.12387.Epub 2015 Aug 20. PMID: 26290460

The histone deacetylase inhibitor butyrate improves metabolism and reduces muscle atrophy during aging.

Walsh ME, Bhattacharya A, Sataranatarajan K, **Qaisar R**, Sloane L, Rahman MM, Kinter M, Van Remmen H.

8. Redox Biol. 2015 Apr 15;5:140-148. Doi: 10.1016/j.redox.2015.04.005 PMID: 25917273

Neuron specific reduction in CuZnSOD is not sufficient to initiate a full sarcopenia phenotype

Sataranatarajan K*, **Qaisar R***, Davis C, Sakellariou GK, Vasiliki A, Zhang Y, Liu Y, Bhaskaran S, McArdle A, Jackson M, Brooks SV, Richardson A, Van Remmen H.

(* , authors contributed equally)

9. Muscle Nerve. 2015 Jan 16. Doi: 10.1002/mus.24572. PMID: 25594832

Quantitative and qualitative adaptations of muscle fibers to glucocorticoids

Minetto MA*, **Qaisar R***, Agoni V, Motta G, Longa E, Miotti D, Pellegrino MA, Bottinelli R

(* , authors contributed equally)

10. Indian J of Physiol and Pharmacol 2014, 58 (1), 1-12. PMID 25462670

What determines myonuclear domains size?

Qaisar R, Larsson L

11. Acta Physiol (Oxf). 2014 Dec;212(4):316-29. Doi: 10.1111/apha.12320. Epub 2014 June 30. PMID: 24888432

Actin sliding velocity on pure myosin isoforms from hindlimb unloaded mice.

Maffei M, Longa E, **Qaisar R**, Agno V, Desaphy JF, Camerino DC, Bottinelli R, Caneparo M.

12. J Physiol. 2013 May 1;591(Pt 9):2333-44. doi: 10.1113/jphysiol.2012.250092. Epub 2013 Mar 4. PMID: 23459759

Hormone replacement therapy improves contractile function and myonuclear organization of single muscle fibers from postmenopausal monozygotic female twin pairs.

Qaisar R, Hedstrom Y, Pöllänen E, Ronkainen P, Kaprio J, Alen M, Sipilä S, Kovanen V, Larsson L

13. Am J Physiol Regul Integr Comp Physiol. 2012 Nov;303(10):R1090-9. doi: 10.1152/ajpregu.00636.2011. Epub 2012 Sep. PMID: 23019215

Loss of muscle strength during sepsis is in part regulated by glucocorticoids and is associated with reduced expression of myosin heavy chain type IIb

Alamdari, N, Toraldo G, Aversa Z, Renaud G, **Qaisar R**, Larsson L, Jasuja R, Hasselgren P

14. FASEB J. 2012 Mar;26(3):1077-85. doi: 10.1096/fj.11-192195. Epub 2011 Nov 28. PMID: 22125316
Is functional hypertrophy and specific force coupled with addition of myonuclei? A single fiber study of myostatin knock-out and IGF-1 over-expressing mice
Qaisar R, Renaud G, Morine K, Barton ER, Sweeney H.L, Larsson L
15. J Physiol. 2011 Apr 15;589(Pt 8):2007-26. Epub 2011 Feb 14. PMID:21320889
Preferential skeletal muscle myosin loss in response to mechanical silencing in a novel rat intensive care unit model: Underlying mechanisms.
Ochala J, Gustafson AM, Llano Diez M, Renaud G, Li M, Aare S, **Qaisar R**, Banduseela VC, Hedström Y, Tang X, Dworkin B, Ford CG, Nair SN, Perera S, Gautel M, Larsson L.
16. Biophysical society journal (2011)
Myonuclear domain size and 3D myonuclear organization in single muscle fibers from myostatin deficient or IGF1 overexpressing mice.
R. Qaisar
17. Aging Cell. 2010 Oct;9(5):685-97. doi: 10.1111/j.1474-9726.2010.00594.x. Epub 2010 Jul 2. PMID: 20633000
Effects of ageing and gender on the spatial organization of nuclei in single human skeletal muscle cells
Cristea A*, **Qaisar R***, Edlund PK, Lindblad J, Bengtsson E, Larsson L.
(*, authors contributed equally)
18. Neuromuscular disorders. 2009
Effects of ageing and gender on the spatial organization of nuclei in single human skeletal muscle cells
A Cristea , PK Edlund, J Lindblad, R **Qaisar**, E Bengtsson, L Larsson.
19. Neuromuscular disorders. 2009
Acute Quadriplegic Myopathy: Underlying mechanisms, improved diagnostic methods and specific intervention strategies.
AM Gustafson, J Ochala, ML Diez, G Renaud, M Li, S Aare, **R Qaisar**, VC Banduseela, Y Hedstrom, X Tang, B Dworkin, GC Ford, KS Nair, G Perera, M Gautel, L Larsson
20. Exp Physiol. 2009 Jan;94(1):117-29. Epub 2008 Sep 26. PMID: 18820003
Myonuclear domain size and myosin isoform expression in muscle fibres from mammals representing a 100,000 fold difference in body size.
Liu JX, Höglund AS, Karlsson P, Lindblad J, **Qaisar R**, Aare S, Bengtsson E, Larsson L.

SEMINARS AND CONFERENCES

I presented my research work (speaker + poster) in following seminars and conferences.

1. **NIA summer training course, Buck Institute, Novato, CA, USA (June 2017)**
Defining the role(s) of ER stress in age- and oxidative stress-related skeletal muscle impairment.
R Qaisar.
2. **Experimental Biology Conference, San Diego, USA (April 2017)**
Restoration of SERCA ATPase as an intervention to muscle atrophy and weakness.
R Qaisar, Bhaskaran S, Ranjit R, Sataranatarajan K, Premkumar P, Huseman K, H Van Remmen.
3. **Oklahoma Medical Research Foundation Retreat, Oklahoma City (March 2017)**
Restoration of SERCA ATPase as an intervention to muscle atrophy and weakness.
R Qaisar, Bhaskaran S, Ranjit R, Sataranatarajan K, Premkumar P, Huseman K, H Van Remmen.
4. **Physiology of Skeletal Muscle and Bone during Aging: Impact of Health span. Oklahoma Medical Research Foundation Retreat, Oklahoma City (March 2016)**
Oxidative stress-induced dysregulation of excitation-contraction coupling contributes to muscle weakness.

R Qaisar, Bhaskaran S, Ranjit R, Riddle K, H Van Remmen

- 6⁵ **Advance in Skeletal Muscle Biology in health and disease, University of Florida (March 2017)**
Oxidative stress-induced dysregulation of excitation-contraction coupling contributes to muscle weakness.
7 **R Qaisar**, Bhaskaran S, Ranjit R, Riddle K, H Van Remmen.
- 6 **Oklahoma Medical Research Foundation Retreat, Oklahoma City (March 2016)**
Mechanism(s) of force deficit in mouse models of muscle specific-deletion of CuZnSod1.
R Qaisar, Sataranatarajan K, Riddle K, H Van Remmen.
- 7 **American Aging Association, Marina Del Rey, LA (2015)**
Neuron specific reduction in CuZnSOD is not sufficient to initiate a full sarcopenia phenotype.
K Sataranatarajan, **R Qaisar**, C Davis, GK Sakellariou, A Vasilaki, Y Zhang, Y Liu, S Bhaskaran, A McArdle, M Jackson, SV Brooks, A Richardson, H Van Remmen.
- 8 **IIM Conference, Siena Italy (2014)**
Quantitative and qualitative adaptations of muscle fibers to glucocorticoids.
R Qaisar, MA Minetto, V Agoni, G Motta, E Longa, D Miotti, MA Pellegrino, R Bottinelli.
- 9 **MyoAge workshop, Jyväskylä Finland (2011)**
Contractile function and myonuclear organization in single fibers from monozygotic female twins discordant for hormone replacement therapy.
Qaisar R, Hedstrom Y, Sipilä S, Kovanen V, Larsson L.
- 10 **MyoAge workshop, Lecce Italy (2011)**
Is functional hypertrophy and specific force coupled with addition of myonuclei at the single muscle fiber level.
R Qaisar.
- 11 **Biophysical society, Baltimore USA (2011)**
Myonuclear domain size and 3D myonuclear organization in single muscle fibers from myostatin deficient or IGF1 overexpressing mice.
R Qaisar.
- 12 **European Muscle Congress, Padova Italy (2010)**
Myonuclear domain size and 3D myonuclear organization in single muscle fibers from myostatin deficient or IGF1 overexpressing mice.
R Qaisar.
- 13 **World Muscle Society, Geneva Switzerland (2009)**
Effects of muscle hypertrophy on individual myonuclear domain sizes in single muscle fibers from myostatin deficient or IGF-1 over-expressing mice.
R Qaisar, K Morine, ER Barton, HL Sweeney, L Larsson.
- 14 **World Muscle Society, Geneva Switzerland (2009)**
Acute quadriplegic myopathy: underlying mechanisms, improved diagnostic methods and specific intervention strategies.
L Larsson, AM Gustafson, J Ochala, V Banduseela, M Li, S Aare, Y Hedstrom, **R Qaisar**, M Llano Diaz, X Tang, BR Dworkin.
- 15 **European Muscle Congress, Oxford London (2008)**
Effects of aging and gender on the spatial organization of nuclei in single human skeletal muscle fibers.
Qaisar R, Cristea A, Edlund PK, Lindblad J, Bengtsson E, Larsson L.

TEACHING EXPERIENCE

Worked as a lecturer in the department of physiology, Khyber medical university, Peshawar in two terms (April 2007-Feb 2008 & April-Sep 2012). Lectured under- and post-graduate students on various aspects of respiratory, renal and muscle physiology.

Lectured medical students in the 'Muscle Biology Course' on annual basis in the University Of Uppsala, Sweden from 2008 to 2012.

Lectured PhD students in the 'Geroscience' course in the University Of Oklahoma health Science Center, USA in 2017.

Supervised research projects of following medical students in our labs (Universities of Uppsala and Pavia) as part of my PhD and Post-doctoral work.

- Carl Ohlson, Project title; "Apoptosis in ICU rats", June 2010 to April 2011
- Tatulesca Delia, Project title; "Myosin isoform distribution in unloaded mice", June-July 2013
- Tarik Habdi, Project title; "Myosin isoforms in steroid myopathy", July-Aug 2013

SCIENTIFIC REVIEWE WORK

Working as a reviewer, Khyber Medical University (KMU) Journal of Medical Sciences since July 2013.

Reviewed an article for the Annals of Biomedical Engineering Journal, titled; 'Preventive effects of poloxamer 188 on muscle cell damage mechanics under oxidative stress " in August 2017.

Reviewed an article for the Equine Veterinary Journal UK, titled; "Relationships between myonuclear domain size and muscle fiber properties in thoroughbred horse muscles" in April 2010.

COMPUTR SKILLS

Windows XP, 7

MS Word, MS Excel, MS Power Point.

Graphics (Adobe Illustrator, Adobe Photoshop)

Biostatistics (Sigma plot, Sigma stat, Graph pad prism)

CO-CURRICULAR ACTIVITIES

Literature: Worked as the Editor-in Chief of Cenna (2005), annual literary magazine of Khyber Medical College, Peshawar Pakistan.

Sports: Cricket, Tennis, Table Tennis.

Others: Astrophysics, Comparative religions, music, poetry, photography, hiking.

REFERENCES

Holly Van Remmen

Member and Program chair

Aging and Metabolism Research Department

Oklahoma Medical Research Foundation

825 NE, 13th Street, Oklahoma city 73104

Holly-vanremmen@omrf.org

Tel: +1-405-271-2520

Fax: 405-271-3470

Arlan Richardson

Donald W Reynolds Endowed Chair of Aging Research

Professor of Geriatric Medicine

University of Oklahoma Health Science Center

Research Career Scientist

Oklahoma City VA Medical Center

Arlan-richardson@ouhsc.edu

Tel: +1-210-237-2314

Lars Larsson

Professor/Senior Physician
Department of Physiology and Pharmacology
Karolinska Institute
Nanna Svartz Vag 2
171 77, Stockholm, Sweden
lars.larsson@ki.se
Tel: +46 (0) 8-524 872 95

Roberto Bottinelli

Professor, Department of Molecular Medicine
University of Pavia
Via Forlanini 6
27100, Pavia, Italy
roberto.bottinelli@unipv.it
Tel: +39.0382.987257

Julien Ochala

Lecturer in Human Physiology
Centre of Human and Aerospace Physiological Sciences
King's College, London
SE-1 1UL, London, United Kingdom
Julien.ochala@kcl.ac.uk
Tel: +44 (0) 20 7848 8102