

Curriculum Vitae (CV)

Saad Serfraz

Address : Centre of Agriculture Biochemistry and Biotechnology (CABB), UAF, Faisalabad

Serfraz.saad@gmail.com; saad.serfraz@uaf.edu.pk +3365193056

Date of birth: 01-01-1990, Sex: Male, Nationality: Pakistani

Education

From January 2018 - March 2021

PhD in Molecular Biology

UMR AGAP, CIRAD, INRA, SupAgro, Guadeloupe, France

From Sept 2014- Jan 2015

Harvard University (Short Course on Cell biology)

Fundamentals of Neuroscience: Neurons and Networks (Honour code:71%)

From 2011-2013

MS In biotechnology

National Institute for Biotechnology and Genetic Engineering (NIBGE)

Pakistan Institute for Engineering and Applied Sciences (PIEAS)

- M.Phil. in Biotechnology
(Equivalent to Master Degree)
- CGPA 3.92/4.00
- 2nd position

From 2007-2011

University of Arid Agriculture Rawalpindi

Bachelor Degree(Honours): Plant Breeding and Genetics

- CGPA: 3.80/4.00.
- Awards and Honours: Merit Based Scholarship in 2008

Awards and Honours

- Marie Skłodowska-Curie scholarship (EU research framework programme: H2020 / Marie Skłodowska-Curie Actions), Short term research fellowship (2016)
- Best presenter Award: National Student Conference 2015: National Institute for Biotechnology and Genetic Engineering, Pakistan
- Merit Scholarship at University of Arid Agriculture Rawalpindi (2008)

Teaching

From October 2015- continued

Assistant Professor

University of Agriculture Faisalabad (UAF)

Centre of Agriculture Biochemistry and Biotechnology (CABB)

Major Courses

- Recombinant DNA technology-II (Biotech-302)
- Biotechnology and Biosafety (BBAA-210)
- Recent Advances in Biotechnology (Biotech-710)
- Transgenic Plants (Biotech-706)
- Technique in Biotechnology (Biotech-304)

Research Experience

From October 2015- continued

Assistant Professor

University of Agriculture Faisalabad (UAF)

Centre of Agriculture Biochemistry and Biotechnology (CABB)

Relevant Research Publications

1. Areej, A., Nawaz, H., Aslam, I., Danial, M., Qayyum, Z., Rasool, U. A., Asif, J., Khalid, A., **Serfraz, S.**, Saleem, F., Mubin, M., Shoaib, M., Shahnawaz-ul-Rehman, M., Nahid, N., & Alkahtani, S. (2023). Investigation of NLR Genes Reveals Divergent Evolution on NLRome in Diploid and Polyploid Species in Genus *Trifolium*. *Genes*, 14(4), 867. <https://doi.org/10.3390/GENES14040867/S1>
2. Asif, J., Qureshi, F., Zain, M., Nawaz, H., Naz, E., Fareed, S., Bibi, A., Nawaz, S., Saleem, F., Shafique, M., Tabasum, S., Maqsood, U., **Serfraz, S.**, Alkahtani, S., Zayad Hospital, S., & Yar Khan, R. (2023). Investigation of Resistance Genes in Genus *Vigna* Reveals Highly Variable NLRome in Parallel Domesticated Member Species. *Genes* 2023, Vol. 14, Page 1129, 14(6), 1129. <https://doi.org/10.3390/GENES14061129>
3. Rani, S., Zahra, R., Bakar, A., Rizwan, M., Sultan, A. B., Zain, M., Mehmood, A., Danial, M., Shakoor, S., Saleem, F., Serfraz, A., Rehman, H. M., Khan, R. S. A., **Serfraz, S.**, & AlKahtani, S. (2023). Dynamic Evolution of NLR Genes in Dalbergioids. *Genes*, 14(2), 377.
4. Vassilieff, H., S. Haddad, V. Jamilloux, N. Choisne, V. Sharma, D. Giraud, M. Wan, **S. Serfraz**, A.D.W. Geering, P.Y. Teycheney and F. Maumus. 2022. CAULIFINDER: a pipeline for the automated detection and annotation of caulimovirid endogenous viral elements in plant genomes. *Mob. DNA* 13.

From January 2018- 2021

Doctoral Student

UMR AGAP, CIRAD, INRA, SupAgro, Guadeloupe, France

Thesis title: *Caulimoviridae* evolution through paleovirological approaches

Relevant Research Publications

1. Serfraz, S.; Sharma, V.; Maumus, F.; Aubriot, X.; Geering, A.D.W.; Teycheney, P.Y. Insertion of Badnaviral DNA in the Late Blight Resistance Gene (R1a) of Brinjal Eggplant (*Solanum Melongena*). *Front. Plant Sci.* 2021, doi:10.3389/fpls.2021.683681.
2. Serfraz, S.; Sharma, V.; Geering, A.; Maumus, F.; Teycheney, P.-Y. Exploring the Role of Florendovirus in Plant Biology. In *Proceedings of the Caribbean Science and Innovation Meeting 2019*; Pointe-à-Pitre (Guadeloupe), France, October 2019.

From June 2017 to December 2017

Ingénieur de recherche

Laboratory of Stress Defenses and Reproduction of Plants

University of Reims, Champagne Ardennes,

Title: Improved grapevine productivity and tolerance to abiotic and biotic stresses by combining resistant cultivars and beneficial microorganisms (VitiSmart)

From Dec-2016 to Feb-2017

Research Associate

Centre for National research Italy

Institute for Genetics and Biophysics

Molecular Genetics and Genomics Lab

Title: Unravelling the genetic and molecular landscape of skeletal neoplastic degenerations

From 2014-2015

Research associate

National Institute for Biotechnology and Genetic Engineering (NIBGE)

Project title: 'Metagenomics for circular DNA viruses and genomic components among various host of *geminiviridae* using Next Generation Sequencing'.

Relevant Research Publications

1. Ismail, H., Hassan, I., Zubair, M., Khan, M.Z., **Serfraz, S.**, Jamil, N., et al. (2017). First Report of Pedilanthus leaf curl virus, Tobacco leaf curl betasatellite, and Guar leaf curl alphasatellite Infecting Radish (*Raphanus sativus*) in Pakistan. **Plant Dis.**, PDIS-09-16-1265-PDN.

From 2011-2013

Worked as M.Phil. Researcher

At National Institute for biotechnology and Genetic Engineering (NIBGE) , Faisalabad, Pakistan

Thesis title: Characterization of Begomoviruses of Cotton, Okra, and Development of resistance using Artificial Zinc finger proteins(AZPs)

Relevant research publication

1. Serfraz, S., Amin, I., Akhtar, K. P. and Mansoor, S. (2015), Recombination Among Begomoviruses on Malvaceous Plants Leads to the Evolution of *Okra Enation Leaf Curl Virus* in Pakistan. **Journal of Phytopathology**. doi: 10.1111/jph.12373

Skills

Computational skills:

Programming languages: Python, R and Command line interface (CLI) Linux

Related Certificates

1. ELIXIR Training: Plant Genome Assembly and Annotation
Montpellier, 24-28 September 2018
2. Python: Learn Python programming
Udemy Online portal
3. Bioconductor for Genomic Data Science
University of John Hopkins
4. Command Line Tools for Genomic Data Science
University of John Hopkins

Wet-lab Skills

Immunohistochemistry, Immunofluorescence, Cell culture using mammalian cell lines, Bioimaging, Nucleic acid and protein hybridization techniques and Q-PCR, Plant transformation (direct and Indirect), Cloning and expression analysis, Plant regeneration, DNA editing tool (Artificial Zinc finger protein). Agrobacterium mediated infectivity assay.

Oral Presentation

- Serfraz S., Sharma V., Geering A., Maumus F., Teycheney P.Y.. 2019. Exploring the role of *Florendovirus* in plant biology. In : *Abstract book of the Caribbean Science and Innovation Meeting : Coopérer sur les problématiques communes au territoires Caribéens*. Le Gosier : UAG, p. 123-123. Caribbean Science and Innovation Meeting (CSIM 2019), 2019-10-19/2019-10-22, Le Gosier .
- Serfraz, S., Amin, I., Briddon, R., Mansoor, S. (2016) Viral Metagenomics an efficient tool for studying host pathogen interactoin. International Conference on Advancements in Biotechnology (March 30th-31st)

- Serfraz, S., Amin, I., Briddon, R., Mansoor, S. (2015) Next Generation Sequencing of circular DNA viruses and genomic components among various host of *geminiviridae*. 2nd National Student conference, NIBGE, Faisalabad(2nd best Oral presenter)
- Serfraz, S., Amin, I and Mansoor, S. (2014) Characterization of Begomoviruses of Cotton, Okra, and Development of resistance using Artificial Zinc finger proteins(AZPs) National Student Conference, NIBGE, Faisalabad
- Serfraz, S., Amin, I and Mansoor, S. (2015) Next generation sequencing revolutionizing conventional virology, Symposium on Geminiviruses, NIBGE, Faisalabad

Poster Presentation

- Serfraz, S., Amin, I., Briddon, R., Mansoor, S. (2013) Viral metagenomics of geminiviruses in weeds species. ICARDA annual meeting. April 2016, Islamabad, Pakistan
- Serfraz, S., Amin, I., Briddon, R., Mansoor, S. (2013) Prevalence of Cotton leaf curl burewala virus (CLCuBuV) in cultivated cotton species in Punjab. International Conference of Biotechnology: Prospects & Challenges in Agriculture, Industry, Health and Environment” April 22-26, 2013, NIBGE, Faisalabad, Pakistan

Recent Participation in conferences

- Plant bioprotech, Reims, France 2017
- International Congress on Transposable Elements 2020, Saint-Malo France.
- 5th Uppsala Transposon Symposium sept 30-oct 02 2020.

References

Referee Contacts and details

1. Dr. Pierre-Yves Teychney
Researcher
Genetic Improvement and Adaptation of Mediterranean and Tropical Plants
CIRAD-Bios, Guadeloupe, France
Relation: PhD supervisor
Email address: teycheney@cirad.fr
2. Dr. Andrew Geering
Principal Research Fellow
Centre for Horticultural Science
University of Queensland, Brisbane Australia
Relation: PhD Co-supervisor
Email address: a.geering@uq.edu.au

3. Dr. Florian Maumus
Researcher
URGI-INRAE Versailles
Relation: Collaborator and mentor
Email address: fmaumus@gmail.com

4. Dr. Imran Amin
Principal Scientist
National Institute for Biotechnology and genetic Engineering(NIBGE)
Email address: imranamin1@yahoo.com
Relation: Supervisor (MS) and PI

Publication list

1. Areej, A., Nawaz, H., Aslam, I., Danial, M., Qayyum, Z., Rasool, U. A., Asif, J., Khalid, A., **Serfraz, S.**, Saleem, F., Mubin, M., Shoaib, M., Shahnawaz-ul-Rehman, M., Nahid, N., & Alkahtani, S. (2023). Investigation of NLR Genes Reveals Divergent Evolution on NLRome in Diploid and Polyploid Species in Genus Trifolium. *Genes*, 14(4), 867. <https://doi.org/10.3390/GENES14040867/S1>
2. Asif, J., Qureshi, F., Zain, M., Nawaz, H., Naz, E., Fareed, S., Bibi, A., Nawaz, S., Saleem, F., Shafique, M., Tabasum, S., Maqsood, U., **Serfraz, S.**, Alkahtani, S., Zayad Hospital, S., & Yar Khan, R. (2023). Investigation of Resistance Genes in Genus Vigna Reveals Highly Variable NLRome in Parallel Domesticated Member Species. *Genes* 2023, Vol. 14, Page 1129, 14(6), 1129. <https://doi.org/10.3390/GENES14061129>
3. Rani, S., Zahra, R., Bakar, A., Rizwan, M., Sultan, A. B., Zain, M., Mehmood, A., Danial, M., Shakoor, S., Saleem, F., Serfraz, A., Rehman, H. M., Khan, R. S. A., **Serfraz, S.**, & Alkahtani, S. (2023). Dynamic Evolution of NLR Genes in Dalbergioids. *Genes*, 14(2), 377.
4. Vassilieff, H., S. Haddad, V. Jamilloux, N. Choisine, V. Sharma, D. Giraud, M. Wan, **S. Serfraz**, A.D.W. Geering, P.Y. Teycheney and F. Maumus. 2022. CAULIFINDER: a pipeline for the automated detection and annotation of caulimovirid endogenous viral elements in plant genomes. *Mob. DNA* 13.
5. **Serfraz, S.**; Sharma, V.; Maumus, F.; Aubriot, X.; Geering, A.D.W.; Teycheney, P.Y. Insertion of Badnaviral DNA in the Late Blight Resistance Gene (R1a) of Brinjal Eggplant (*Solanum Melongena*). *Front. Plant Sci.* 2021, doi:10.3389/fpls.2021.683681.
6. **Serfraz, S.**; Sharma, V.; Geering, A.; Maumus, F.; Teycheney, P.-Y. Exploring the Role of Florendovirus in Plant Biology. In Proceedings of the Caribbean Science and Innovation Meeting 2019; Pointe-à-Pitre (Guadeloupe), France, October 2019.
7. Ismail, H.; Hassan, I.; Zubair, M.; Khan, M.Z.; **Serfraz, S.**; Jamil, N.; Mansoor, S.; Asad, S.; Amin, I. First Report of Pedilanthus Leaf Curl Virus, Tobacco Leaf Curl Betasatellite, and Guar Leaf Curl Alphasatellite Infecting Radish (*Raphanus Sativus*) in Pakistan. *Plant Dis.* 2017, 101, 845, doi:10.1094/PDIS-09-16-1265-PDN.

8. **Serfraz, S.;** Amin, I.; Akhtar, K.P.; Mansoor, S. Recombination Among Begomoviruses on Malvaceous Plants Leads to the Evolution of Okra Enation Leaf Curl Virus in Pakistan. J. Phytopathol. 2015, 163, 764–776, doi:10.1111/jph.12373.