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Education:

- B.Sc. in Biophysics: Biophysics Department, Faculty of Science, Cairo University (May 2003). Graduation essay titled: “*Liposomes as A Gene Delivery System of cancer*”.
- M.Sc. in molecular biophysics (October 2009), Biophysics Department, Faculty of Science, Cairo University, Egypt. “*Biophysical study of Polyethylenimine - DNA complex used in DNA Transfection*”.
- PhD in molecular biophysics (May 2015), Biochemistry & Structural Biology department, Lund University, Sweden. “*Glypican-1: Structural and functional analysis of the N-glycosylated human protein*”.

Positions held:

- Instructor: Biophysics Department, Faculty of Science, Cairo University, Egypt (2004-2010).
- **PhD student:** Dept. of Biochemistry and Structural Biology, Centre for Molecular Protein Science, Lund University, Sweden (Sept. 2010- present).
- Parental leave (May 2013-Oct. 2013).
- **MAX-IV synchrotron macromolecular crystallography beamline user support** (September 2014-present).
- On leave from Faculty of Science, Cairo University, Egypt (Sept. 2010-present).

Fellowships, Honor and Awards:

- Student Chairman of the Egyptian Scientific Biophysical Society, Cairo University, 2001-2003.
- Erasmus Mundus scholarship for PhD studies in Lund University (2010-2012).
- Erasmus Mundus research grant 2011.
- Knut and Alice Wallenberg Foundation research grant 2012.
- Per Westlings Minnesfond research grant 2014.
- Royal physiographic society travel grant 2014.
- MAX IV Best Thesis Award 2015.

Other achievements:

- Construction of vertical & horizontal gel electrophoresis units.
- Design and construction of Electroporator power supply unit for bacterial and human cell DNA transfection (computer controlled) in the lab.

Teaching experience:

- Structural Bioinformatics course (master level) 2012-2013, Lund University, Sweden.
- Organization and teaching at the Collaborative Structural Bioinformatics School between Cairo University & Lund University (October 2012) Cairo, Egypt.
- Molecular biophysics practical course for 4th year undergraduate students 2005-2010, Cairo University, Egypt.

- Radiation biophysics practical course for 3rd & 4th year undergraduate students 2005-2010, Cairo University, Egypt.
- General biophysics practical course for 1st year undergraduate students, 2004-2010, Cairo University, Egypt.

Research Experience:

- Mammalian cell tissue culture techniques.
- Glycoprotein and other eukaryotic proteins expression in mammalian systems.
- Proteins expression in bacteria.
- Protein purification, biochemical & biophysical characterization using different techniques (MS, SEC, CD, DLS, DSF).
- Protein characterization by analytical ultracentrifugation (AUC) and data analysis using UltraScan III (including SOMO) & SEDFIT software packages.
- High-throughput protein crystallization screening and optimization using vapor diffusion and free-interface diffusion methods.
- Protein crystal manipulation, X-ray diffraction data collection and processing using *XDS* & *iMosflm* software.
- Post-crystallization treatments for improving diffraction quality such as annealing, soaking and controlled dehydration using the HC1 device.
- Protein structure determination (molecular replacement & experimental phasing), model building and validation using the *SHARP/*auto*SHARP*, *COOT*, *CCP4* and *PHENIX* software packages.
- Protein small angle X-ray scattering (SAXS) data collection, processing, modelling and analysis using the ATLAS and ScÅtter software.

Publications:

- M.M. Mady, **Wael A. Mohammed**, Nadia M. El-guendy & A.A. Elsayed (2011) Effect of polymer molecular weight on the DNA/PEI polyplexes properties. *Romanian J. Biophys*, 21(2), 151–165.
- M.M. Mady, **Wael A. Mohammed**, Nadia M. El-guendy & A.A. Elsayed (2011) Interaction of DNA and polyethylenimine: Fourier-transform infrared (FTIR) and differential scanning calorimetry (DSC) studies. *International Journal of Physical Sciences*, 6 (32), 7328–7334.
- Svensson G, **Awad W**, Håkansson M, Mani K & Logan DT (2012) Crystal structure of N-glycosylated human glypican-1 core protein: structure of two loops evolutionarily conserved in vertebrate glypican-1. *J. Biol. Chem.* 287, 14040-14051.
- Danielsson J, **Awad W**, Saraboji K, Kurnik M, Lang L, Leinartaitė L, Marklund SL, Logan DT & Oliveberg M (2013) Global motions from the strain of a single hydrogen bond. *Proc. Natl. Acad. Sci. USA* 110, 3829–34.
- **Wael Awad**, Svensson Birkedal G, Thunnissen MMGM, Mani K & Logan DT (2013) Improvements of the order, isotropy and electron density of glypican-1 crystals by controlled dehydration. *Acta Crystallogr. D Biol. Crystallogr.*, 69 (12), 2524-2533.
- **Wael Awad**, DT Logan, K Mani. GPC1 (glypican 1). (2014) *Atlas Genet Cytogenet Oncol Haematol – number 18(7)*.
- **Wael Awad**, Barbara Adamczyk, Jessica Örnros, Niclas G. Karlsson, Katrin Mani, and X Derek T. Logan (2015) Structural aspects of N-Glycosylations and the C-terminal region in human glypican-1. *J. Biol. Chem.* 290, 22991–23008

Manuscripts in preparation:

- Expression, purification and biophysical characterization of human EXTL3. **Awad W**, Gabriel Svensson, Katrin Mani & Derek T. Logan.
- Structure and functional properties of the group B streptococcus transcriptional repressor Rex. Saravanamuthu Thiyagarajan, **Awad W**, Mikael C. Bauer, Derek T. Logan & Claes von Wachenfeldt.

Oral Presentations:

1. 28th Annual MAX IV Laboratory User Meeting, 21st -23rd September 2015 Lund, *Sweden*. "Glypican-1: structural and functional analysis of the N-glycosylated human protein"
2. 19th SBNET 2015, 12th-15th June 2015, Tällberg, Sweden. "Glypican-1: core protein structure and its topology on the cell membrane"
3. XXth Nordic Glycobiology meeting, 11th- 12th December 2014, Lund, Sweden. " Glypican-1: All about the structure"
4. 23rd CoLuAa, 5th -6th November 2014, Copenhagen, Denmark." Solution structure of human glypican-1 (role of N-glycan & positioning of HS attachment domain)"
5. 4th Nordic Proteoglycan meeting in Lund, Sweden 26th -27th of August 2014. "Structural study of human N-glycosylated Glypican-1 core protein"
6. 22nd CoLuAa, 25th -26th September 2013, Lund, Sweden." Improvements of the packing, isotropy and electron density of glypican-1 crystals by controlled dehydration using the HCl machine"

Poster presentations:

1. Congress and general Assembly of the International Union of Crystallography (IUCr 2014), August 5th-12th, 2014, Montreal, *Canada*." Improving the diffraction quality of glypican-1 crystals by controlled dehydration"
2. 26th Annual MAX IV Laboratory User Meeting, 23rd -25th September 2013 Lund, *Sweden*. "Improvements of the packing, isotropy and electron density of glypican-1 crystals by controlled dehydration using the HCl machine"
3. 8th International Conference of Proteoglycans 25th – 29th August 2013, Frankfurt, *Germany* "Crystallographic study of human glypican-1 core protein"
4. CoLuAa XIX, 3rd - 4th November 2011, Copenhagen, *Denmark*. "Crystal Structure of Human Glypican-1 Core Protein"
5. Fifteenth Annual Meeting of the Swedish Structural Biology Network "SBNET", 17th 20th June 2011, Dalarna, *Sweden*.
6. CoLuAa XX, 4th - 5th November 2010, Copenhagen, *Denmark*.
7. European Biophysics Congress Genoa (EBSA 2009), 11th - 15th July 2009, Genova, *Italy*. "Biophysical Characterization of PEI/DNA Complex used in DNA Transfection".
8. 5th SESAME Users Meeting "The Scientific Horizons of the SESAME Project" 27th -29th November 2006, Alexandria, *Egypt*.

International Courses & Workshops:

1. EMBO Practical Course on Structural and biophysical methods for biological macromolecules in solution" 19th – 26th January 2014 | São Paulo, *Brazil*.
2. EMBO Practical Course on "Computational Structural Biology: from data to structure to function" 15th -19th April 2013, Hamburg, *Germany*.
3. 45th Course of International School of Crystallography on " Present and Future Methods for

- Biomolecular Crystallography” 30th May - 10th June 2012, Erice, *Italy*.
4. CCP4 Study Weekend on “Data Collection and Processing” 4th - 6th Jan 2012, Warwick, *United Kingdom*.
 5. Summer School on Protein Crystallography and Drug Design (May 9th - July 4th 2006), Cairo University, *Egypt*.
 6. Cancer Molecular Biology practical school (September 2005) National Cancer Institute (NCI), *Egypt*.

References:

- 1- Derek T. Logan
Associate Professor
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- 2- Katrin Mani
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