Magdy S. Alabady, *PhD*

Contact Information

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Current Position

Postdoctoral Research Fellow (October 2008 - Present), Feedstock's Genomics Program, Energy Bioscience Institute, Institute for Genome Biology, University of Illinois, USA

Education

- **Ph.D., Cairo University, Faculty of Science, Plant Functional Genomics (2007)**

I conducted the PhD research project at the Cotton Functional Genomics Center, University of **California-Davis, California, and USA.** [I used genetical genomic and high-throughput expression profiling approaches to study the genetic programs underpinning the cell wall expansion and cellulose deposition in the developing cotton fiber]

- **M.Sc., Cairo University, Faculty of Science, Plant Molecular Genetics (2001)**

I conducted the M.Sc. research project at the Agriculture Genetic Engineering Research Institute (AGERI), Cairo, Egypt. [I genotyped the Egyptian cotton germplasms and developed framework inter-specific linkage map using DNA molecular markers including microsatellites (SSR), AFLP, and RFLP]

- **B.Sc., Mansourah University, Faculty of Science, Botany and Chemistry (1994)**

I graduated with double majors, Botany and Chemistry. I conducted two research projects as a prerequisite for graduation. **In Botany**, my graduation project was on using of the electron microscopy to image the interaction between mycorrhizae and the vascular tissues of plant roots. **In Chemistry**, my graduation project was about the chemistry of microbial degradation of organic matters

Competitive peer-reviewed Grants

US Department of Energy (DOE):

Matthew Hudson, Magdy Alabady, Stephen Moose (2010-2013). **Title** "The role of small RNA in biomass deposition and perenniality in Andropogoneae feedstock's". **Awarded $1.2 million over 3 years**

US-Egypt Science and Technology Board:
Osama Elshihy and Magdy S Alabady (2008-2011) **Title** "A Genetical genomics approach to discover developmentally regulated QTL controlling fiber quality in Egyptian cotton". **Awarded US$ 200,000 over 3 years**

US-Egypt Science and Technology Board:
Thea A. Wilkins, Magdy S. Alabady, and Osama Elshihy (2004-2007). **Title** "Profiling of Gene Expression and Mapping of Cotton Fiber Gene(s) using Fiber ESTs and Fiber-related SSR Markers". **Awarded US$ 120, 000 over 3 years**

Research Experience

Current Projects:

1. Deep sequencing and profiling of the small RNA (sRNA), mRNA (mRNA-seq) and AGO-cleaved mRNA (acmRNA) transcriptome of multiple organs and developmental tissues of the biofuel crops *Miscanthus X giganteus* (Mxg) using the next generation sequencing technology such as Illumina sequencing-by-synthesis (SBS).
2. Developing a novel approach to sequence the gene-space of the highly repetitive genomes such as the genome of Mxg.
3. Identification of the sRNA role in the resistance of Mxg to the infection by Yellow Sugarcane Aphid (YSA).

Previous Projects:

1. Comparative transcription profiling of the developing cotton fiber in upland cotton and the fiber mutants fiberless (fl) and green fiber to understand the mechanisms regulating the transition from the fiber initiation to elongation stages, and from elongation to secondary cell wall (SCW) stages, respectively.
2. Deep sequencing of the transcriptome of developing cotton fiber during the SCW stage to indentify the SCW-specific CesA genes.
3. Comparative transcription profiling of breast tumor cells co-cultured with normal mammary epithelial cell. (My role was to design, conduct, and analyze the microarray experiment)
4. Development of inter-specific genetic linkage map using cotton fiber EST-derived SSR DNA markers.

Teaching Experience

- Visiting lecturer, Plant Biotechnology Course (graduate/undergraduate), Texas Tech University, USA
- Lecturer, Classical and Molecular Genetics courses, Cairo University, Egypt

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Mentorship and Leadership

Mentoring Minority Students

- I supervised the PhD student James Bolton from Alabama State University during his USDA scholarship to conduct his PhD research project in the "Functional Genomics Center" at UCD (2005) and in the "Plant Function Genomics Center" at TTU (2007). James is currently a USDA scientist.
- I mentored and supervised the undergraduate student Ornella Ngamboma during her research scholarship, which was awarded by the MacNair Scholars Program at UIUC. Ornella continued working with me in the same lab as an assistant and preparing to attend the Medical School next year.

Supervising Graduate students in Egypt:

- During 2001-2006, I mentored and supervised 3 Masters students in the Plant Biotechnology Research Lab (PBRL), Cairo University, Egypt.

Lab leadership and seniority

- I was the senior scientist and lab leader in the "Plant Functional Genomics Center" at Texas Tech University, Sept 2006 –October 2008
- I was the senior researcher and lab leader in the "Plant Biotechnology Research Lab, Cairo University, Egypt", Oct 2005- August 2006.

Campus Activities

- At Texas Tech University, I initiated, organized and leaded the campus-wide "Microarray Discussion Group" during 2006 through 2008. This discussion group was highly regarded and attracted many attendees including faculty members, graduate students, and postdocs from different fields and from the two campuses of TTU (main campus and the health science center campus (HSCTTU-campus)).

Recognition

Young scientist of the month "July 2007", Bioclues, University, Greater Copenhagen, Denmark

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Talks and Presentations

Invited Talks

The **2010 Kriton-Hatzios Symposium on small RNA**, Annual meeting of the southern section of American Society of Plant Biologists (ASPB), April 12, Knoxville, Tennessee, USA

Conference Presentations

The 2007 International Conference on Bioinformatics and Computational Biology (BioComp07), World Congress in Computer Science, Computer Engineering, & Applied Computing, Las Vegas, Nevada, USA (June 25-28, 2007)

Conference

1. Annual meetings of the American Society of Plant Biologists, July 31-August 4, 2010, Montreal, Canada
2. Joint Annual meetings of American Society of Plant Biologists and the Phycological

Society of America, July 18-22, 2009, Hawaii
3. World Cotton Research Conference-4, September 10-14, 2007, Lubbock, Texas, USA
4. Cotton Genome Sequencing Workshop, Sunday, September 9, 2007, Texas Tech University, USA
5. Plant Biology & Botany Joint Congress, July 7-11, 2007, Chicago, USA
6. International Conference on Bioinformatics & Computational Biology, June 25-30, 2007, Las Vegas, USA
7. BioVision 2006, April 26-29 April, 2006, Alexandria bibliotheca, Alexandria, Egypt

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Publications, Abstracts and Posters

In Preparation

Alabady M.S., Matthew Hudson, and Stephen. Moose Deep sequencing of the sRNA, mRNA and degradome from several tissues of Miscanthus X giganteus reveals many new conserved and biomass-related miRNAs.

Alabady M.S., Arpat, B.A., Osama M. E., and Thea A. Wilkins (submitted) Genetical genomics-based model of Pima fiber development identifies candidate developmentally regulated QTL networks and potential pathways regulating the transition from primary to secondary cell wall stages.

Published Research Articles:

Swaminathan, K., **Alabady, M.**, Varala, K., De Paoli, E., Ho, I., Rokhsar, D.S., Arumuganathan, A.K., Ming, R., Green, P.J., Meyers, B.C., Moose, S.P., Hudson, M.E. (2010). Genomic and small RNA sequencing of Miscanthus x giganteus shows the utility of sorghum as a reference genome sequence for Andropogoneae grasses. Genome Biology, 11:R12

Alabady, M.S., Eunseog Youn, and Thea A Wilkins (2008) Double feature Selection and Cluster Analyses in Developing Cotton Fiber Microarray Data. BMC Genomics, 9:295

Xu Z, Kohel RJ, Song G, Cho J, Yu J, Koo P, **Alabady M S**, Chu J, Dong J, Zhu Y, Wilkins TA, Yu JZ (2008) Gene-rich islands for fiber development in the upland cotton genome. Genomics, 92(3): 173-183

Young-Hoon Park, **Magdy S. Alabady**, Brad Sickler, Thea A. Wilkins, John Yu, David M. Stelly, Russell J. Kohel, Osama M. El-Shihy, Roy G. Cantrell, Mauricio Ulloa (2005). Genetic Mapping of New Cotton Fiber Loci Using EST-derived Microsatellites in An Interspecific Recombinant Inbred Line (RIL) Cotton Population. *Molecular Genetics and Genomics (MGG)*, 274(4): 428-441

Published Abstracts and Posters

1. **Alabady, M. S.,** Hudson, M., and Moose, S. (2010) MiRNAs co-target the same transcript at overlapped and non-overlapped sites. Annual meetings of the American Society of Plant Biologists, July 31-August 4, 2010, Montreal, Canada
2. **Alabady, M.,** Hudson, M., Ming, R., and Moose, S. P. (2009) Profiling of the small RNA transcriptomes in the biomass-related tissues of Miscanthus X giganteus. Joint Annual

meetings of American Society of Plant Biologists and the Phycological Society of America. July 18-22, Hawaii

3. Thea A. Wilkins, **Magdy S. Alabady**, Scott Franklin and Greg D. May (2008) Functional Genomics Of Secondary Cell Wall Biogenesis In Developing Cotton Fibers. PAG-XVI, San Diego, CA, January 12-16, 2008
4. **Alabady, M. S.,** Wilkins, T. A. (2007). New Cotton Microarray Platforms: Tools for Functional Genomic Studies. World Cotton Research Conference-4, Lubbock, Texas, September 10-14, 2007, USA
5. Goebel, M., **Alabady, M. S**., Debney, C. W. Smith, Wilkins, T. A., Zhang, H. –B. (2007) Comparative analysis of Gene Expression in Developing Fiber Between Upland and Sea Isaland Cottons. World Cotton Research Conference-4, Lubbock, Texas, September 10-14, 2007, USA
6. **Alabady, M S**, and Wilkins, T A (2007) Expression profiling of the cotton fiber transcriptome reveals preferential linkage of Ubiquitin-proteasome genes to fiber QTL in extra long staple cotton (*Gossypium barbadense L.*). Plant Biology & Botany Joint Congress, Chicago, July 7-11, 2007
7. **Alabady, M.S**., Elshihy, O. M. E, Kamel, Z. M., Ibrahim A. I., and Wilkins, T. A. (2006) Expression Profiling of the Gossypium barbadense Cotton Fiber Transcriptome: Towards Understanding Fiber Cell Walls in Relation to Agronomic Traits. BioVision2006 Conference (26-29 April, 2006), Alexandria bibliotheca, Alexandria, Egypt.
8. Ulloa, M., Frelichowski, J.E., Palmer, M., Park, Y., **Alabady, M.S**., Wilkins, T.A., Yu, J., Kohel, R.J., Cantrell, R., Main, D., Tomkins, J.P. (2006) Development of Microsatellite Markers from Fiber Ests and Bac-End Sequences for the Construction of a Consensus Cotton Genetic Map. Plant and Animal Genome Conference Proceedings.
9. **Magdy S. Alabady**, Bulak A. Arpat, Osama M. Elshihy,Thea A. Wilkins. Expression Profiling of the Pima Cotton (*Gossypium Barbadense* L.) Fiber Transcriptome: in Search of Genes Regulating Fiber Quality. The Annual Meeting of the American Society of Plant Biologists (ASPB), Seattle, Washington, July 16 - 20, 2005.
10. Park, Y.H., Ulloa, M., **Alabady, M. S.,** Frelichowski, J.E., Wilkins, T.A., Stelly, D.M., Cantrell, R.G. Est derived microsatellite markers as a source for mapping fiber quality QTL in cotton (*Gossypium* spp.). Plant and Animal Genome Conference Proceedings. 2005.
11. **Alabady, M.S.**, Ulloa, M., Park, Y.H., Sickler, B.A., Wilkins, T.A., Stelly, D., Cantrell, R.G. Cotton (*Gossypium arboreum* L.) fiber EST-derived compound sequence repeat (CSR) used to develop PCR based markers. ASA-CSSA-SSSA Annual Meeting Abstracts [http://www.asa-cssa-sssa.org/anmeet/]. 31 Oct 2004.
12. Ulloa, M., Park, Y.H**., Alabady, M.S**., Stewart, J.M., Wilkins, T. Origins of allelic diversity and genic regions revealed by microsatellite EST markers in cotton. ASA-CSSA-SSSA Annual Meeting Abstracts, [http://www.asa-cssa-sssa.org/anmeet/]. 31 Oct 2004.
13. **Alabady, M. S**., Ebtissam H. A. Hussein, Hanaiya A. El-Etriby and Madkour, M. A., Genotyping Egyptian Cotton Varieties (*G. barbadense*) using Molecular Markers. Biotechnology and Sustainable Development Conference, Alexandria 2002, Egypt. 16. 2002

Communication

	(Reading, Writing, Speaking**)**
English:	(fluent, fluent, fluent)
German:	(basic, basic, basic)
French:	(Basic, basic, basic)
Arabic:	(Mother tongue)

Previous Positions

Postdoctoral Research Associate (September 2006 – October 2008), Plant Functional Genomics Lab, Texas Tech University, Texas, USA

Researcher and Lab manager (October 2005 - August 2006), Plant biotechnology Research Lab, Cairo University, Egypt

Non-Degree Postgraduate Researcher (January 2004 - October 2005), Cotton Functional Genomics Research Center, Plant Sciences Department, University Of California-Davis

Assistant Researcher (2001-2004), Plant Biotechnology Research Lab, Cairo University, Egypt

Research Assistant (1997-2000), Molecular Genetics and Genome Mapping Department, Agricultural Genetic Engineering Research Institute (AGERI), Agriculture Research Center, Egypt

Research Assistant (1995-1997), National Research Center (NRC), Egypt

Director of Raw Material Analysis Lab (July1994-1996), Egyptian American Chemicals Company, 10th of Ramadan City, Egypt

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Professional Affiliations

SigmaXi (full elected member & President of UIUC chapter)
AAAs/*Science*
American Society of Plant Biologists (ASPB)
International Cotton Genome Initiatives (ICGI)
Bioclues, Roskilde University, Greater Copenhagen, Denmark
