Ezzat El-Sherif

PhD in Genetics

Education

2008 - 2013 **PhD in Genetics**, Kansas State University, USA.

2005 - 2008 **MSc in Electronics and Communications Engineering**, Faculty of Engineering, Cairo University, Egypt.

1999 – 2004 **BSc in Electronics and Communications Engineering**, Faculty of Engineering, Cairo University, Egypt.

Work Experience

2022- **Assistant Professor,** Department of Biology, University of Texas Rio Grande Valley, USA.

2016 - 2022 **Group Leader**, the Division of Developmental Biology, Department of Biology, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany.

Teaching:

- Stochastic model of gene regulation (Masters-level Lectures).
- Practical Masters course: Systems biology of pattern formation (computer modeling).
- Practical Masters course: Developmental biology laboratory (wet lab).
- Practical Masters course: Visualization of transcription during development (wet lab + computational image and data analysis).

Supervision:

- Christine Zellner: PhD (in progress).
- Heike Rudolf: PhD (in progress).
- Hannah Schmelzer: Master (in progress)
- Bianca Assmann: Master (graduated).
- Lukas Kuhlmann: Master (graduated).
- Heike Rudolf: Master (graduated).
- Alena Boos: Master (graduated).
- Nich Sabitzer: Bachelor (in progress).
- Dennis Lamm: Bachelor (graduated).
- Lucas Healey (intern).
- Lisa Koch (intern).
- Laura Rieppel (intern).
- Deanne Widjaya (intern).
- Timo Regensburger (intern).

Service:

- Developed computer programs to allocate bachelor and master students to courses according to their choices and available places.

2015 - 2016	**Postdoc**, Klingler Lab, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany.
2014 - 2015	**Postdoc**, Levine Lab, UC Berkeley, USA.
2010 - 2013	**Graduate Research and Teaching Assistant** at the Division of Biology, Kansas State University, USA. **Teaching:** Principles of Biology.
2008-2010	**Graduate Teaching and Research Assistant** at Computing and Information Sciences Department, Kansas State University, USA. **Teaching:** Computer Organization and C++ Programming.
2007 – 2008	**Research Assistant** at the Electronics Research Institute, Cairo, Egypt.
2006 – 2008	**Graduate Teaching and Research Assistant** at the Electronics Engineering Dept., the American University in Cairo (AUC), Egypt. **Teaching:** Signals and Systems Analysis, Circuit Analysis, Logic Circuits Lab, and Electronic Circuits Lab.
2005-2006	**Graduate Teaching Assistant** at the Electronics and Communications Dept., Faculty of Engineering, Cairo University, Egypt. **Teaching:** Signals and Systems Analysis, Telecommunications, Electric Circuits Design, Programming in Matlab, and Computer Networks.
2004-2005	**Graduate Teaching Assistant** at the Institute of Aviation Engineering & Technology, Cairo, Egypt. **Teaching:** Digital Signal Processing, Telecommunications, Mathematics, Modern Physics, and Engineering Physics.

Recent Conferences and Symposia

Oct. 2019	European Developmental Biology Congress, Alicante, Spain. **Contribution:** Speaker.
Sept. 2019	EMBO Synthetic Biology Workshop, Heidelberg, Germany **Contribution:** Speaker.
June 2018	Systems Biology Symposium at the Euro Evo Devo conference, Galway, Ireland. **Contribution:** Invited Speaker.
June 2018	Tribolium Satellite Meeting at the Euro Evo Devo conference, Galway, Ireland. **Contribution:** Invited Speaker.
Feb. 2018	Workshop on Patterning and Timing in Development, Berlin, Germany. **Contribution:** Speaker.
Feb. 2018	Cellular Dynamics retreat (FOR1756), Cassis, France. **Contribution:** Invited Speaker.
Sept. 2017	EMBO Workshop on Dynamics of living systems, Cargese, France. **Contribution:** Speaker.
July 2016	Euro Evo Devo conference, Uppsala, Sweden. **Contribution:** Speaker.
July 2016	Tribolium Satellite Meeting at the Euro Evo Devo conference, Uppsala, Sweden. **Contribution:** Invited Speaker.
Nov. 2016	EMBO meeting 'From Functional Genomics to Systems Biology', Heidelberg, Germany. **Contribution:** Speaker.

Community

- **Guest Editing** the Special Issue "Systems Biology of Pattern Formation in Development" in the Journal Developmental Biology, 2020.
- **Organizing** Systems Biology Symposium at the Euro Evo Devo conference, Galway, Ireland, June 2018.
- **Organizing** Tribolium Satellite Meeting at the Euro Evo Devo conference, Galway, Ireland, June 2018.
- **Organizing** Tribolium Satellite Meeting at the Euro Evo Devo conference, Uppsala, Sweden, July 2016.

Education and Outreach

- Creating educational videos for Systems Biology concepts and illustrative videos for my research (check my YouTube channel: Ezzat El-Sherif - Research).

Funding

- Alexander von Humboldt Fellowship: 2017-2019 (**Amount:** €83,000).
- Internal position to fund two PhD students: 2017-2020.
- Emerging Talents Initiative (ETI) Award (FAU university award): 2019-2020 (**Amount:** €5,000).
- DFG Research Grant (funding for own position, consumables, and 1 PhD student): 2019-2022 (**Amount:** €500,000).

Publications

(**Note:** top 5 publications are marked with †; My name shown in bold, names of students under my supervision underlined)

- Diaz-Cuadros M.*, Pourquié O.*, **El-Sherif E.***, "Patterning with clocks and genetic cascades: segmentation and regionalization of vertebrate vs. insect body plans", an invited literature review, 2021 PLOS Genetics. ***Corresponding Authors.**
- Jutras-Dubé L., **El-Sherif E.***, François P.* "Geometric models for robust encoding of dynamical information into embryonic patterns", eLife 2020. ***Corresponding Authors.**
- Müller P.*, **El-Sherif E.***. "A systems-level view of pattern formation mechanisms in development", Developmental Biology 2020 (Editorial). ***Corresponding Authors.**
- Rudolf H., Christine Z., **El-Sherif E.***. "Speeding up anterior-posterior patterning of insects by differential initialization of the gap gene cascade," Developmental Biology 2020. ***Corresponding Author.**
- Boos A., Distler J, Rudolf H., Klingler M.*, **El-Sherif E.***. "A re-inducible genetic cascade patterns the anterior-posterior axis of insects in a threshold-free fashion." eLife 7, e41208, 2018. ***Corresponding Authors.** †
- Kuhlmann L, **El-Sherif E.***. "Speed Regulation and Gradual Enhancer Switching Models as Flexible and Evolvable Patterning Mechanisms." bioRxiv, 261891, 2018. ***Corresponding Author.**

- Lai YT, Deem KD, Borras-Castells F, Sambrani N, Rudolf H, Suryamohan K, **El-Sherif E.**, Halfon MS, McKay DJ, Tomoyasu Y. "Enhancer identification and activity evaluation in the red flour beetle, *Tribolium castaneum*." Development 2018.
- Zhu X, Rudolf H, Healey L., Francois P, Brown SJ, Klingler M, **El-Sherif E.***, "Speed regulation of genetic cascades allows for evolvability in the body plan specification of insects." PNAS 2017. ***Corresponding Author.** †
- **El-Sherif E.**, Levine M, "Shadow enhancers mediate dynamic shifts of gap gene expression in the *Drosophila* embryo," Current Biology, vol. 26, no. 9, p1164–1169, 2016. †
- **El-Sherif E.**, Zhu X, Fu J, Brown SJ, "Caudal regulates the spatiotemporal dynamics of pair-rule waves in *Tribolium*," PLoS Genet 10(10): e1004677, 2014. †
- **El-Sherif E.**, Averof M, Brown SJ**,** "A segmentation clock operating in blastoderm and germband stages of *Tribolium* development," Development, vol. 139, no 23, pp 4341-6, 2012. †
- Lynch J*, **El-Sherif E.***, Brown SJ, "Comparisons of the embryonic development of *Drosophila*, *Nasonia*, and *Tribolium*," WIRES Developmental Biology, vol. 1, no. 1, pp. 16-39, 2012. ***Equal contribution**.
- **El-Sherif E.**, Abdelazeem S, "A Model-Based Approach for Building Optimum Classification Cascades," INTECH, 2010.
- **El-Sherif E.**, Abdelazeem S, Abu El-Yazeed MF, "Automatic Generation of Optimum Classification Cascades," 19th International Conference on Pattern Recognition (ICPR 2008), pp. 1-4, December 2008.
- Sherif Abdelazeem, **El-Sherif E.,** "Arabic Handwritten Digit Recognition", International Journal on Document Analysis and Recognition, vol. 11, no. 3, December, 2008.
- **El-Sherif E.**, Abdelazeem S, "A Two-Stage System for Arabic Handwritten Digit Recognition Tested on a New Large Database", International Conference on Artificial Intelligence and Pattern Recognition (AIPR-07), Orlando, FL, USA, July 2007.