

# Natalia El-Merhie, Ph.D

Early life origins of chronic lung diseases

Research Center Borstel

Leibniz-Lung Center

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## EDUCATION

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- 11.2012-07.2017 **Ph.D**  
**Group of Medical Cell Biology**  
*Faculty of Medicine*  
*Institute of Anatomy and Cell Biology*  
*Justus Liebig University,*  
*Giessen, Germany*  
**Supervisor** - Prof. Dr. Eveline Baumgart-Vogt  
**Doctoral Thesis** - **Summa cum Laude**  
The role of peroxisomes in chronic obstructive pulmonary disease (COPD)
- 10.2012-06.2015 **Molecular Biology and Medicine of the Lung (MBML)**  
*Justus Liebig University,*  
*Giessen, Germany*
- 10.2012-11.2015 **International Giessen Graduate School for Life Sciences (GGL)**  
*Justus Liebig University,*  
*Giessen, Germany*
- 10.2009 – 03.2012 **M.Sc in Biology**  
*Beirut Arab University,*  
*Lebanon*  
**Thesis** - **GPA=3.52/4**  
Effect of calcium treatment on blood parameters, gonadal development and structure of bone in immature female rats
- 10.2005-07.2009 **B.Sc in Biology**  
*Beirut Arab University,*  
*Lebanon*  
**GPA=3.32/4**

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## EXPERIENCE

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- 09.2017-Present **Postdoctoral Researcher**  
**Group of Early Life Origins of Chronic Lung Diseases**  
*Research Center Borstel*  
*Leibniz-Center for Medicine and Biosciences*  
*Borstel, Germany*  
❖ **Research:** studying the underlying mechanisms of COPD pathogenesis in *in vitro*

model using cigarette smoke in combination with the viral mimetic that recapitulates viral infection in the upper pulmonary airways

❖ **Co-supervisor of two PhD students**

- Identification of mediators released during early stages of exacerbation in response to Poly (I:C) (a viral mimetic) trigger in smoke-exposed mouse model and further understanding whether these mediators could be used to predict COPD exacerbation
- Investigation of the immune system of the offspring exposed to mild maternal smoking during pregnancy and investigation whether this adverse prenatal environment could predispose the offspring to develop pulmonary diseases later in life

❖ **Member of the Borstel Postdoc Initiative (within the Leibniz Association)**

❖ **Junior scientist at the Leibniz Science Campus for Evolutionary Medicine of the Lung (EvoLUNG)**

10.2012-07.2017

**PhD Researcher**

*Institute of Anatomy and Cell Biology  
Justus Liebig University,  
Giessen, Germany*

**Research on the role of peroxisomes in COPD with the focus on anti-oxidative pathways, peroxisome proliferator –activated receptor gamma (PPAR $\gamma$ ), localization, expression and abundance of peroxisomal proteins, isolation of peroxisomal fractions and their subsequent characterization and *in vitro* COPD models for studying alterations and molecular pathogenesis of peroxisomes following peroxisomal biogenesis knockdown.**

09.2010-01.2012

**Instructor**

Beirut Arab University,  
Lebanon

Responsible for

❖ Teaching

undergraduate students

- Histology
- Zoology
- Comparative anatomy of vertebrates
- Microbiology

graduate students

- Cell biology

❖ construction and grading of exams

❖ leading discussions

09.2007-10.2007

**Undergraduate Internship in Pathology**

Hammoud Hospital University Medical Center, Lebanon

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**CONFERENCE CHAIR**

30.09.2019

**Invited Chair of a Thematic Poster Session – ERS International Congress  
in Madrid, Spain**

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## PEER REVIEW

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2019 Nature Scientific Reports  
2020 PeerJ

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## ADDITIONAL CERTIFICATES

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11.2019 Laboratory Animal Science: FELASA Category B  
04-05.10.2019 Masterclass in Scientific Writing and Publishing by Joao Monteiro and Christoph Schmitt – Chief Editors of Nature Medicine and Nature Metabolism  
04.2017-07.2017 Business English Basics for Life Sciences – An eight-session series  
03.2012 TOEFL iBT – Score 95/120

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## TRAVEL GRANTS

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07-10.03.2019 17th ERS Lung Science Conference (LSC) in Estoril, Portugal  
13.09.2018 French-German Lung Retreat (cooperation of DZL and INSERM) in Paris, France

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## PROFESSIONAL MEMBERSHIPS and FELLOWSHIPS

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Since  
06.08.2018 Early Career Member of European Respiratory Society (ERS) – Assembly 3  
02.08.2018 Member of German Society for Pneumology and Respiratory Medicine (DGP)  
01.07.2018 Academy fellow of German Center for Lung Research (DZL)

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## LANGUAGES

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Russian - Native  
Arabic - Native  
English - Full working proficiency  
German - Basic

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## PUBLICATIONS

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**ERS International congress, Madrid, 2019: highlights from the Basic and Translational Science Assembly**

Ubags ND, Baker J, Boots A, Costa R, **El-Merhie N**, Fabre A, Faiz A, Heijink I, Hiemstra P, Lehmann M, Meiners S, Rolandsson SE, Bartel S  
ERJ Open Research 2020 6: 00350-2019;  
<https://doi.org/10.1183/23120541.00350-2019>

**Early Career Members at the Lung Science Conference and the Sleep and Breathing Conference 2019**

Almendros I, **El-Merhie N**, Jha A, Keir HR, Lykouras D, Mahmutovic Persson I, Ubags ND, Bartel S  
Breathe 2019 15: 234-240  
<https://doi.org/10.1183/20734735.0203-2019>

**Environmental Impact on Health across Generations: Policy Meets Biology. A Review of Animal and Human Models**

Lønnebotn M, **El-Merhie N**, Holloway JW, Horsnell W, Krauss-Etschmann S,

Gómez Real F, Svanes C  
*Challenges* 2018, 9(2):42  
<https://doi.org/10.3390/challe9020042>

**Intrauterine smoke exposure deregulates lung function, pulmonary transcriptomes, and in particular insulin-like growth factor (IGF)-1 in a sex-specific manner**

Dehmel S, Nathan P, Bartel S, **El-Merhie N**, Hagen Scherb, Milger K, John-Schuster G, Yildirim AÖ, Hylkema M, Irmeler M, Beckers J, Schaub B, Eickelberg O, Krauss-Etschmann S  
*Scientific Reports* 2018, 8(1):7547  
<https://doi.org/10.1038/s41598-018-25762-5>

**Differential alterations of the mitochondrial morphology and respiratory chain complexes during postnatal development of the mouse lung**

**El-Merhie N**, Baumgart-Vogt E, Pilatz P, Pfreimer S, Pfeifer B, Pak O, Djuro K, Michael M, Karnati S  
*Oxidative Medicine and Cellular Longevity*, Volume 2017, Article ID 9169146, 22 pages, 2017  
<https://doi.org/10.1155/2017/9169146>

***Paper of the Month*** according to **Anatomische Gesellschaft January-2018**  
<https://anatomische-gesellschaft.de/index.php?id=paper-of-the-month-2018-01>

**Diagnosis and markers for the assessment of COPD; can a consensus be reached?**

**El-Merhie N**, Boateng E, Tumpara S, Trompak O, Seimetz M, Pilatz A, Baumgart-Vogt E, Karnati S.  
*PVRI Chronicles, volume 3: issue 2 (2016)*

**Targeting PPAR $\gamma$  in Lung fibroblasts: Prospects of therapeutic treatment for IPF**

Boateng E, **El-Merhie N**, Trompak O, Tumpara S, Seimetz S, Pilatz A, Baumgart-Vogt E, Karnati S  
*PVRI Chronicles, volume 3: issue 2 (2016)*

**Effect of calcium treatment on blood parameters, gonadal development and the structure of bone in immature female rats**

**El-Merhie N**, Sabry I, Balbaa M  
*J Physiol Biochem* (2012) 68:219–227