CURRICULUM VITAE

General information

Full name:	Johanna Louise Höög	Nationality:	Swedish
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PhD degree

2003-2007: PhD in Cell biology and Biophysics: European Molecular Biology Laboratory (EMBL), Heidelberg Thesis: "The 3D Architecture of Interphase Microtubule Cytoskeleton and Functions of Microtubule Plus End Tracking Proteins in Fission Yeast″ (Claude Antony).

Postdoctoral work

2008-2009: Postdoc with Prof. Keith Gull, University of Oxford, UK

Current position

2016 - present: Assistant professor of Cell Biology**,** University of Gothenburg.

Previous positions

2014 – 2015: Scientist, Sahlgrenska Academy, University of Gothenburg
2009 - 2013: Sir Henry Wellcome Postdoctoral Fellow (independent position), University of Oxford, UK including:

- Visiting Scientist Max Planck Institute for Molecular Cell biology and Genetics, Dresden, Germany, Jan 2012 - April 2014
- Maternity leave, March 2012 – March 2013
- Visiting Scientist "Boulder Lab for 3D Electron Microscopy of cells", University of Colorado, Boulder, USA, Jan 2009 – Dec 2011

Prizes, Honors, and Other Special Scientific Recognition

2016 Poster prize at the EMBO symposium: Microtubules; From Atoms to Complex Systems, Heidelberg, Germany (~250 posters)
2011 4 weeks internship at BBC Science Broadcasting, London, UK
2007 German Society for Electron Microscopy award for an outstanding PhD thesis
2006 European Fission Yeast meeting Poster prize (~150 posters)
2003 Acceptance into the EMBL International PhD student programme
2002 Society of General Microbiology's Undergraduate Prize
1998 Carl von Linné scholarship

Tutoring experience

Main supervisor to PhD student: Davide Zabeo (2016-)
Co-supervisor: Aleksander Cvjetkovic (2014-); Dimitra Panagakis (2017-)

Major scientific grants (current)

2018-2022:	Knut and Alice Wallenberg (co-applicant)	44,7 MSEK
2016-2019:	VR Young Investigator	3,2 MSEK

2009-2013:	Sir Henry Wellcome Postdoctoral Grant	~3 MSEK
2008-2009:	EMBO postdoctoral grant	~0,5 MSEK
2008-2012:	Marie Curie ESTAR PhD studentship	~0,7 MSEK

National and international assignments of importance:

2016 – current Steering committee member of the Interreg Board "ESS and MAXIV: Cross Boarder network & post graduate educational program"
2017 Master thesis opponent, Lissabon, Portugal.
Instructor at 9 international electron tomography workshops (in Germany, USA, Austria, Sweden)

Editorial:

Reviewer for: Nature Protocols, FEBS letters, Molecules, Cell and Tissue Research, Respiratory Research

Invitations to international meetings (selected key oral presentations last two years)

2017	Microscience Microscopy Congress, Manchester, UK
	Advanced Cryo-Electron Tomography Workshop, Vienna, Austria
2016	Membrec, Helsinki, Finland (plenary lecture)
	Conference on Macromolecular Structure and Function, Tällberg, Sweden
	Regional Research Network on Extracellular Vesicles, Oslo, Norway

Citation Metrics

https://scholar.google.se/citations?user=LvFYONsAAAAJ&hl=sv&oi=ao
H-index 9; Total citations 411; Total publications 17

Ten Most Important Publications Arranged by Subject Area or Methodology.

Google Scholar page:
https://scholar.google.se/citations?user=LvFYONsAAAAJ&hl=sv&oi=ao

1. Zabeo D, Heumann JM, Schwartz CL, Suzuki-Shinjo A, Morgan G, Widlund P, Höög JL[C], (2018), A lumenal interrupted helix in human sperm tail microtubules, *Scientific Reports* (Impact factor: 4.8)
   In this pilot study, we performed the first cryo-ET investigation of an intact human flagellum. To our surprise, we found a complex interrupted helical structure extending for several micrometers inside the lumen of microtubules. This shows that flagellar structure is not entirely conserved and that there is a need to not only image model organisms, but also the cells that are affected in human ciliopathies.

2. Zabeo D, Cvjetkovic A, Lässer C, Schorb M, Lötvall J*, **Höög JL*,** (2017) Exosomes from a single cell type have diverse morphologies, *Journal of Extracellular Vesicles,* Preliminary impact factor: **~12**, Extracellular vesicles and exosomes from many sources (e.g. blood, seminal fluid, breast milk) have been shown to be morphologically diverse. One could assume that those different morphologies arouse from separate cells, with each cell type creating one particular morphology. In this paper, we show, using different electron microscopy techniques, that a single cell type can produce morphologically diverse exosomes.

3. Cvjetkovic A, Crescitelli R, Lässer C, Zabeo D, Widlund P, Nyström T, **Höög JL*□**, Lötvall J*□, (2017), Exosomes in motion, *Science matters,* 3 (6), e201704000003, Impact factor: Not yet available, We show that fluorescently labeled EVs change their shape in a matter of minutes, regardless of whether they are isolated from human body fluids, mouse tissue or cell culture of human cells or yeast. Our findings therefore cast doubt on movement being confined to cells, suggesting that some EVs indeed have an intrinsic capacity to move.

4. Zabeo D*, Crescitelli R*, O'Toole E*, Roque H*, **Höög JL□**, 3D Ultrastructure of multi-vesicular bodies in fission yeast, *Science Matters* 3 (3), e201702000007, Impact factor: Not yet available, In this work, we investigated and characterized the three-dimensional ultrastructure of MVBs in S. pombe using electron tomography. We discovered a positive correlation between MVB size and the number of intralumenal vesicles (ILVs) contained in them. MVBs grew larger with the progression of the cell cycle, hinting at an unknown interaction between the regulation of the two processes.

5. **Höög JL□**, Lacomble S, Bouchet-Marquis C, Briggs L, Park K, Hoenger A, Gull K, (2016), 3D architecture of the Trypanosoma brucei flagella connector, a mobile transmembrane junction, *PLoS Neglected Tropical Diseases*, Impact factor: **3.8**, The flagella connector is described in 3D using an unprecedented variety of different 3D electron microscopy methods, making this paper both a methodologically important paper as well as describing an important cellular junction.

6. **Höög JL□,** Lötvall J**, (**2015), Diversity of extracellular vesicles in human ejaculates revealed by cryo-electron microscopy, *Journal of Extracellular Vesicles,* **4**: 28680,

Preliminary impact factor: **~12**, A wide diversity of extra-cellular vesicles (EVs) was found in human ejaculate in comparison to any body fluid studied to date. This was also the first time completely unprocessed (no fixation, centrifugation, filtration etc) EVs were imaged.

7. **Höög JL**□, Lacomble S, O'Toole ET, McIntosh JR, Gull K (2014), Modes of flagellar assembly in *Trypanosoma brucei* and *Chlamydomonas reinhardii, eLife* 2014;3:e01479 Impact factor: **7.7**, This paper was the first to describe the mechanism of growth in the flagellum tip, using cell biological insight to tease out temporal and mechanistic information from the frozen 3D images electron tomography provides.

8. **Höög JL**□, Bouchet-Marquis C, McIntosh JR, Hoenger A, Gull K, (2012) Cryo-Electron Tomography and 3-D Analysis of the Intact Flagellum in Trypanosoma brucei, *Journal of Structural Biology*, 178(2):189-98 Impact factor: **2.8**, We revealed a new structure called "the staples" which probably attach the flagellum to the cell body of this human parasite. Flagellar motility is essential for parasitic survival in the human host.

9. **Höög JL**□, Huisman SM, Sebö-Lemke Z, Sandblad L, McIntosh J.R, Antony C, Brunner D, (2011), Electron tomography reveals a flared morphology on growing microtubule ends, *Journal of Cell Science*, (124): 693-8 Impact factor: **4,4** By studying the ultrastructure of microtubules just after release from a depolymerizing drug, we could describe how growing microtubules looks like inside of a cell, which differed dramatically for what had been shown in vitro.

10. **Höög JL**, Schwartz CL, Noon AT, O'Toole ET, Mastronarde DN, McIntosh JR, Antony C□, (2007), Organization of Interphase Microtubules in Fission Yeast Analyzed by Electron Tomography, *Developmental Cell*, 12(3) 349-361 Impact factor: **9.2**, This paper showed the first electron tomographic reconstruction of a whole eukaryotic cell and was therefore a large methodological leap forward. The story stirred a wide general interest and over 40 newspapers/websites/science magazines covered it (e.g. Frankfurter Allgemeine Zeitung, Der Standard, The Financial Times, Forskning och Framsteg, Nature, GEO etc). The high-resolution map of the cell showed the architecture of the microtubule cytoskeleton and its interactions with other cellular organelles.