Curriculum Vitae

Dominika Elmlund

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Structural Biology
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Objective

Talented published Ph.D. with substantial laboratory experience. Considerable knowledge of computational methods and programming. Skilled in general molecular techniques and biochemical methods. Committed and detail oriented young researcher with positive attitude, exceptional planning and communication skills, and an aptitude for working in a team environment. Possessing a firm sense of responsibility and capacity to work under pressure.

Education

Ph. D.	**Structural Biotechnology**, Royal Institute of Technology (KTH), Stockholm, Sweden Dissertation: "Towards unbiased 3D reconstruction in single-particle cryo-electron microscopy"	2011
M. Sc.	**Chemistry**, Lund University, Lund, Sweden	2008

Research Experience

- **Post-doctoral Fellow**, Structural Biology, Stanford University, USA — Sept 2011 – present
- **Visiting Scientist**, Carlsberg Research Center, Copenhagen, Denmark — Dec 2008 – Aug 2009

Teaching Experience

- **Structural Biochemistry**, Karolinska Institutet, Stockholm, Sweden — 2009 – 2010

Fellowships and Awards

- **Post-doctoral Fellowship**, Swedish Research Council (VR), for conducting research on TFIID-dependent transcription initiation in Roger Kornberg's laboratory at Stanford University — 2011 – 2013
- **Marie Curie Early Stage Training Fellowship**, for graduate work on electron microscopy of transcription complexes — 2008 – 2010
- **European Student Exchange Program Erasmus,** biochemistry program at Lund University, Sweden — 2005 – 2006

Publications and manuscripts

- **Elmlund D,** Elmlund H. SIMPLE: software for *ab initio* reconstruction of flexible single-particles. Submitted to Journal of Structural biology. 2012
- Wulff RP, Lundqvist J, Rutsdottir G, Hansson A, Stenbaek A, **Elmlund D,** Elmlund H, Jensen PE, Hansson M. The activity of barley NADPH-dependent thioredoxin reductase C is independent of the oligomeric state of the protein: tetrameric structure determined by cryo-electron microscopy. Biochemistry. 2011 May 10;50(18):3713-23.
- Wulff RP, Lundqvist J, Rutsdottir G, Hansson A, Stenbaek A, **Elmlund D,** Elmlund H, Jensen PE, Hansson M. The activity of barley NADPH-dependent thioredoxin reductase C is independent of the oligomeric state of the protein: tetrameric structure determined by cryo-electron microscopy. Biochemistry. 2011 May 10;50(18):3713-23.

  Elmlund D, Elmlund H. Ab initio structure determination from electron microscopic images of single molecules coexisting in different functional states. Structure. 2010 Jul 14;18(7):777-86.
- Lundqvist J, Elmlund H, Wulff RP, Berglund L, **Elmlund D**, Emanuelsson C, Hebert H, Willows RD, Hansson M, Lindahl M, Al-Karadaghi S. ATP-induced conformational dynamics in the AAA+ motor unit of magnesium chelatase. Structure. 2010 Mar 10;18(3):354-65.
- Lundqvist J., **Elmlund D.**, Heldt D., Deery E., Söderberg C.A., Hansson M., Warren M., Al-Karadaghi S. "The AAA+ motor complex of subunits CobS and CobT of cobaltochelatase visualized by single-particle electron microscopy", *J. Struct Biol. (2009) 167(3):227-34*
- **Elmlund D**, Elmlund H**.** High-resolution single-particle orientation refinement based on spectrally self-adapting common lines. J Struct Biol. 2009 Jul; 167(1):83-94.

- Lambert W., Koeck P.J., Ahrman E., Purhonen P., Cheng K., **Elmlund D.,** Hebert H., Emanuelsson C.. "Subunit arrangement in the dodecameric chloroplast small heat shock protein Hsp21", *Protein Sci. (2010 Nov 19).*

Peer-reviewed conference contributions

- **Bay Area Electron Microscopy Conference, Stanford University, USA,** title: "SIMPLE – an image processing system for *ab initio* 3D reconstruction in single-particle electron microscopy", 2009
- **Benzon Symposium 55 – Transcription, Chromatin and Disease, Copenhagen, Denmark,** title: "Visualization of cyclin-dependent kinase 8 module and RNA polymerase II binding to Mediator by electron cryo-microscopy" 2008

Collaborations

- **TFIID dependent pre-initiation complex assembly** with Kenji Murakami, Stanford University, CA, USA
- **Cryo-EM structural studies of the Mg-chelatase enzyme** with Mats Hansson's group, Carlsberg Research Center, Copenhagen
- **Structure and function of RNA polymerase II with transcription factor IIF** with Pierre-Jean Mattei, and Ralph Davis, Stanford University, CA, USA

Skills

- **Theory for image formation** in the electron microscope
- **Programming languages:** Fortran 95/2003/2008, Perl, Ruby, Python
- Major image processing packages for single-particle electron microscopy, **EMAN, Spider**.
- **Specimen preparation** (dry and cryo) for biological single-particle electron microscopy.
- **Single-particle data collection** on electron microscopes**, FEI CM120**, **JEOL 2100F**, JEOL 3000SFF
- Languages, **English (fluent), Swedish (fluent)**, Russian (basic), Polish (fluent)
- **Cloning**
- **Yeast genetics**
- **Molecular biology methods**

- **Nuclear protein purification**
- **In-depth knowledge of protein biochemistry**

References

- Prof. Roger Kornberg, Stanford University, Palo Alto, CA, USA
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