

NIKOLAUS GRIGORIEFF

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ACADEMIC EDUCATION

- 1985 - 1989 Technische Universität Berlin, Germany
Vordiplom in physics (first grade)
- 1989 - 1993 University of Bristol, UK
M.Sc. & Ph.D. in physics (semiconducting materials and devices, electron microscopy)

EXPERIENCE

- 1988 - 1989 Technische Universität Berlin, Germany
- Tutor with teaching responsibilities
 - Student representative on faculty board, joint responsibility for faculty policies and degree course design
- 1991 - 1993 University of Bristol, UK
- Demonstrator in undergraduate project laboratory, responsible for student supervision and grading
- 1993 - 1998 MRC Laboratory of Molecular Biology, Cambridge, UK
- Postdoctoral research assistant
 - Supervisor for research student, responsible for project design and supervision
- 1996 - 1998 Darwin College, Cambridge, UK
- Organizer of scientific seminars
- 1999 - 2013 Brandeis University, Waltham, MA
- Assistant Professor (1999), Associate Professor (2004), Full Professor (2006)
- 2013 - 2018 Janelia Research Campus, Ashburn, VA
- Group leader
- 2018 - present University of Massachusetts Medical School, Worcester, MA
- Professor

AWARDS, FELLOWSHIPS AND APPOINTMENTS

- 1988-90 Award from the Studienstiftung des Deutschen Volkes (national student award based on university nomination and interview)
- 1989 Award from DAAD (German Academic Exchange Service)
- 1990-93 Student grant from British Telecommunications plc.
- 1995-96 Research fellowship from Deutsche Forschungsgemeinschaft
- 1996-98 Research fellowship at Darwin College, Cambridge, England
- 2000-present Investigatorship, Howard Hughes Medical Institute
- 2004-05 Research fellowship from the Humboldt Foundation

RESEARCH ARTICLES

Grigorieff, N., Cherns, D., Yates, M. J., Hockly, M., Perrin, S. D. & Aylett, M. R. (1993). Electron microscopy of ultra-thin buried layers in InP and InGaAs. *Phil. Mag.* **68**, 121-136.

Grigorieff, N., Cherns, D., Preston, A. R. & Yates, M. J. (1995). Models for termination of crystal boundaries in the theory of transmission electron diffraction and comparison with experimental data. *Acta Cryst.* **A51**, 343-350.

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Grigorieff, N., Ceska, T. A., Downing, K. H., Baldwin, J. M. & Henderson, R. (1996). Electron-crystallographic refinement of the structure of bacteriorhodopsin. *J. Mol. Biol.* **259**, 393-421.

Grigorieff, N. & Henderson, R. (1996). Comparison of calculated and observed dynamical diffraction from purple membrane: implications. *Ultramicroscopy* **65**, 101-107.

Grigorieff, N. (1998). Three-dimensional structure of bovine NADH:ubiquinone oxidoreductase (complex I) at 22 Å in ice. *J. Mol. Biol.* **277**, 1033-1046.

Smith, C. J., Grigorieff, N. & Pearse, B. M. F. (1998). Clathrin coats at 21 Å resolution - A cellular assembly designed to recycle multiple membrane receptors. *EMBO J.* **17**, 4943-4953.

Lam, Y.-M., Grigorieff, N. & Goldbeck-Wood, G. (1999) Direct visualisation of micelles of pluronic block copolymers in aqueous solution by cryo-TEM. *Phys. Chem. Chem. Phys.* **1**, 3331-3334.

Grigorieff, N. & Grigorieff, R. D. (1999). Asymptotisches Verhalten des Erwartungswertes für den größten Wert bei n unabhängigen Beobachtungen einer normalverteilten Variablen. *Reprint-Reihe Fachbereich Mathematik, Technische Universität Berlin* Nr. 647.

Grigorieff, N. (2000) Resolution Measurement in Structures Derived from Single Particles. *Acta Cryst.* **D56**, 1270-1277.

Mindell, J. A., Maduke, M., Miller, C. & Grigorieff, N. (2001). Projection structure of a ClC-type chloride channel at 6.5 Å resolution. *Nature* **409**, 219-223.

Sokolova, O., Kolmakova-Partensky, L. & Grigorieff, N. (2001). Three-dimensional structure of a voltage-gated potassium channel at 2.5 nm resolution. *Structure* **9**, 215-220.

Pirruccello, M.M., N. Grigorieff, and J.A. Mindell, (2002) Electron diffraction of a bacterial ClC-type chloride channel. *Novartis Found Symp.* **245**,193-203.

McGovern, S. L., Caselli, E., Grigorieff, N. & Shoichet, B. K. (2002) A common mechanism underlying promiscuous inhibitors from virtual and high-throughput screening. *J. Med. Chem.* **45**, 1712-1722.

- Jurica, M. S., Licklider, L. J., Gygi, S. P., Grigorieff, N. & Moore, M. J. (2002) Purification and characterization of native spliceosomes suitable for three-dimensional structural studies. *RNA* **8**, 426-439.
- Mindell, J. A. & Grigorieff, N. (2003) Accurate determination of local defocus and specimen tilt in electron microscopy. *J. Struct. Biol.* **142**, 334-347.
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- Sokolova, O., Accardi, A., Gutierrez, D., Lau, A., Rigney, M. & Grigorieff, N. (2003). Conformational changes in the C-terminus of *Shaker* K⁺ channel, bound to the rat Kvβ2-subunit. *PNAS* **100**, 12607-12612.
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- Fotin, A., Cheng, Y., Grigorieff, N., Walz, T., Harrison, S. C. & Kirchhausen, T. (2004) Structure of an auxilin-bound clathrin coat and its implications for the mechanism of uncoating. *Nature* **432**, 649-653.
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& Lawson, C. L. (2012) Outcome of the first electron microscopy validation task force meeting. *Structure* **20**, 205-214.

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Brilot, A. F., Chen J. Z., Cheng, A., Pan, J., Harrison, S. C., Potter, C. S., Carragher, B., Henderson, R., Grigorieff, N. (2012) Beam-induced motion of vitrified specimen on holey carbon film. *J. Struct. Biol.* **177**, 630-637.

Sindelar, C. V. & Grigorieff, N. (2012) Optimal noise reduction in 3D reconstructions of single particles using a volume-normalized filter. *J. Struct. Biol.* **180**, 26-38.

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Ruskin, R. S., Yu, Z. & Grigorieff, N. (2013) Quantitative characterization of electron detectors for transmission electron microscopy. *J. Struct. Biol.* **184**, 385-393.

Rohou, A. & Grigorieff, N. (2014) FREALIX: model-based refinement of helical filament structures from electron micrographs. *J. Struct. Biol.* **186**, 234-244.

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PRE-PRINTS

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