NIKOLAUS GRIGORIEFF

Professor, University of Massachusetts Medical School
Investigator, Howard Hughes Medical Institute
368 Plantation Street, AS4-2049, Worcester, MA 01605, USA
Tel. +1-774-455-6682, Fax +1-508-721-7027
Email: niko@grigorieff.org

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
2015-present	Editor, eLife Sciences
2021	Election to the National Academy of Sciences, USA

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.

Grigorieff, N., Beckmann, E. & Zemlin, F. (1995). Lipid location in deoxycholate-treated purple membrane at 2.6 Å. *J. Mol. Biol.* **254**, 404–415.

Grigorieff, N. & Henderson, R. (1995). Diffuse scattering in electron diffraction data from protein crystals. *Ultramicroscopy* **60**, 295–309.

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 coploymers 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.

Furst, J., Sutton, R. B., Chen, J., Brunger, A. T. & Grigorieff, N. (2003) Electron Cryo-Microscopy Structure of N-ethyl Maleimide Sensitive Factor at 11 Å Resolution. *EMBO J*. **22**, 4365–4374.

Wolf, M., Eberhart, A., Glossmann, H., Striessnig, J. & Grigorieff, N. (2003) Visualization of the Domain Structure of an L-Type Ca^{2+} Channel Using Electron Cryo-Microscopy. *J. Mol. Biol*. **332**, 171–182.

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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Kim, L. A., Furst, J., Butler, M., Xu, S., Grigorieff, N. & Goldstein, S. A. N. (2004) Subunit Composition of Kv4.2-KChiP2 Potassium Channel. *J. Biol. Chem.* **279**, 5549–5554.

Kim, L. A., Furst, J., Gutierrez, D., Butler, M., Xu, S., Goldstein, S. A. N. & Grigorieff, N. (2004) Three-Dimensional Structure of Kv4.2-KChiP2 Channels by Electron Microscopy at 21 Å. *Neuron* **41**, 513–519.

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Rodal, A. A., Sokolova, O., Robins, D. B., Daugherty, K. M., Hippenmeyer, S., Riezman, H., Grigorieff, N. & Goode, B. L. (2005) Conformational changes in the Arp2/3 complex leading to actin nucleation. *Nat. Struct. Mol. Biol.* **12**, 26–31.

Cheng, Y., Wolf, E., Larvie, M., Zak, O., Aisen, P., Grigorieff, N., C. Harrison, S. C. & Walz, T. (2006) Single Particle Reconstructions of the Transferrin–transferrin receptor complex obtained with different specimen preparation techniques. *J. Mol. Biol.* **355**, 1048–1065.

Wolf, M., DeRosier, D. J. & Grigorieff, N. (2006) Ewald sphere correction for single particle electron microscopy. *Ultramicroscopy* **106**, 376–382.

Stroupe, M. E., Tange, T. Ø., Thomas, D. R., Moore, M. J. & Grigorieff. N. (2006) The three-dimensional architecture of the EJC core. *J. Mol. Biol.* **360**, 743–749.

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Zhang, X., Settembre, E., Xu, C., Dormitzer, P. R., Bellamy, R., Harrison, S. C. & Grigorieff, N. (2008) Near-atomic resolution using electron cryo-microscopy and single particle reconstruction. *PNAS* **105**, 1867–1872.

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Chen, J. Z., Settembre, E., Aoki, S. T., Zhang, X., Bellamy, A. R., Dormitzer, P. R., Harrison, S. C. & Grigorieff, N. (2009) Molecular interactions in rotavirus assembly and uncoating seen by high-resolution cryo-EM. *PNAS* **106**, 10644–10648.

Schmidt, M., Sachse, C., Richter, W., Xu, C., Fändrich, M. & Grigorieff, N. (2009) Comparison of Alzheimer Aβ(1-40) and Aβ(1-42) amyloid fibrils reveals similar protofilament structures. *PNAS* **106**, 19813–19818.

Sachse, C., Grigorieff, N. & Fändrich, M. (2010) Nanoscale flexibility parameters of Alzheimer amyloid fibrils determined using electron cryo-microscopy. *Angew. Chem. Int. Ed.* **49**, 1321–1323.

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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.

Veesler, D., Quispe, J., Grigorieff, N., Potter, C. S., Carragher, B. & Johnson, J. E. (2012) Maturation in action: cryoEM study of a viral capsid caught during expansion. *Structure* **20**, 1384–1390.

Campbell, M. G., Cheng, A., Brilot, A. F., Moeller, A., Lyumkis, D., Veesler, D., Pan, J., Harrison, S. C., Potter, C. S., Carragher, B. & Grigorieff, N. (2012) Movies of ice-embedded particles enhance resolution in electron cryo-microscopy. *Structure* **20**, 1823–1828.

Estrozi, L. F., Settembre, E. C., Goret, G., McClain, B., Zhang, X., Chen, J. Z., Grigorieff, N. & Harrison, S.C. (2013) Location of the dsRNA-dependent polymerase, VP1, in rotavirus particles. *J. Mol. Biol.* **425**, 124–132.

Lyumkis, D., Brilot, A. F., Theobald, D. L. & Grigorieff, N. (2013) Likelihood-based classification of cryo-EM images using FREALIGN. *J. Struct. Biol.* **183**, 377–388.

Brilot, A. F., Korostelev, A. A., Ermolenko, D. N. & Grigorieff N. (2013) Structure of the ribosome with elongation factor G trapped in the pre-translocation state. *PNAS* **110**, 20994–20999.

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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Koh, C. S., Brilot, A. F., Grigorieff, N. & Korostelev, A. A. (2014) Taura syndrome virus IRES initiates translation by binding its tRNA-mRNA-like structural element in the ribosomal decoding center. *PNAS* **111**, 9139–9144.

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Abeyrathne, P. D., Koh C. S., Grant, T., Grigorieff N. & Korostelev A. A. (2016) Ensemble cryo-EM uncovers inchworm-like translocation of a viral IRES through the ribosome. *eLife* **5**, e14874, 1–31.

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Tajima, N., Karakas, E., Grant, T., Simorowski, N., Diaz-Avalos, R., Grigorieff, N. & Furukawa, H. (2016) Activation of NMDA receptors and the mechanism of inhibition by ifenprodil. *Nature* **534**, 63–68.

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