

Curriculum vitae Anna Akhmanova

Personal Information

Name : **Anna S. Akhmanova**

Date and place of birth: 11-05-1967, Moscow

Nationality: Russian, Dutch

Present address: Prof. Dr. Anna Akhmanova, Cell Biology, Neurobiology and Biophysics, Department of Biology, Faculty of Science, Utrecht University, Padualaan 8, 3584 CH, Utrecht, The Netherlands;

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Academic education and degrees

University Education: 1984-1989, Moscow State University

MS degree: June 1989 *Discipline:* Biochemistry

PhD thesis: March 4, 1997 *University:* Catholic University of Nijmegen

Appointments

January 1, 2011: Professor and co-chair, Division of Cell Biology, Faculty of Science, Utrecht University, Utrecht, The Netherlands.

2008-2010: Associate Professor (UHD), Department of Cell Biology, Erasmus Medical Centre, Rotterdam, The Netherlands.

2003-2008: Assistant Professor (UD), tenure position at the Department of Cell Biology, Erasmus Medical Centre, Rotterdam, The Netherlands.

2001-2002: group leader at the Erasmus Medical Centre, Rotterdam, The Netherlands.

1997-2001: postdoc, Department of Cell Biology and Genetics, Erasmus University of Rotterdam, The Netherlands.

1996-1997: postdoc, Department of Microbiology and Evolutionary Biology, Catholic University of Nijmegen, The Netherlands.

1992-1996: Ph.D. student, Department of Genetics, Catholic University of Nijmegen, The Netherlands.

1991-1992: Research Scholar, Microscopy Group, Department of Applied Physics, University of Twente, The Netherlands.

1989-1991: junior scientist at A.N.Belozersky Laboratory of Bioorganic Chemistry and Molecular Biology, Moscow State University.

Memberships and honors

Elected member of EMBO (European Molecular Biology Organization)

Elected member the Royal Netherlands Academy of Arts and Sciences (KNAW)

Leadership of national and international organizations

2020-current: Scientific delegate of the EMBC/EMBL Council

2011-2017 Chair of the Netherlands Microscopy Society

Major Grants and Awards

2022. Programme leader Gravitation grant “IMAGINE! Innovative microscopy and guidance of cells in their native environment”

2022. European Research Council (ERC) Synergy grant “PushingCell”, together with Michael Sixt (IST Austria), Patricia Bassereau and Pierre Sens (Institut cure, France).

2022. Programme leader ENW-XL grant “On form and growth: Correlative molecular imaging of microtubule structure and dynamics”.

2018. Netherlands Organisation for Scientific Research (NWO) Spinoza Prize, the highest academic distinction in the Netherlands.

2013. European Research Council (ERC) Synergy grant “ModelCell”, together with Marileen Dogterom (TU Delft).

2007. Netherlands Organisation for Scientific Research (NWO) Innovational Research Incentives Scheme VICI award and Aspasia Award.

2001. Netherlands Organisation for Scientific Research (NWO) Innovational Research Incentives Scheme award.

Overview of scientific career

Dr. Anna Akhmanova is a Professor of Cellular Dynamics at the Faculty of Science at the University of Utrecht, The Netherlands. Anna Akhmanova was trained as a biochemist and a molecular biologist and graduated from Moscow State University, Russia, in 1989. She completed her PhD on chromatin proteins in the fruit fly *Drosophila melanogaster* at the University of Nijmegen, the Netherlands in 1997. She did her first postdoctoral research on the early eukaryotic evolution in anaerobic environments at the Department of Microbiology at the University of Nijmegen (1997). During this period, A. Akhmanova demonstrated for the first time the presence of a genome in a hydrogen-producing organelle of an anaerobic protozoan (A.Akhmanova et al., 1998, Nature, 396,527-8). A. Akhmanova then moved to the Department of Cell Biology at the Erasmus MC, where she was first a postdoctoral fellow, and later, since 2001, a group leader. In 2011, Akhmanova became a full Professor and co-chair of the Division of Cell Biology at Utrecht University, the Netherlands.

Scientific achievements of Akhmanova’s group:

- Employed mouse GFP knock-in technology, mass spectrometry and advanced live cell imaging to unravel key interactions within protein networks that regulate microtubule dynamics.
- Delineated fundamental structural principles of protein recruitment to microtubule ends and used these insights for in-vitro reconstitution experiments with purified proteins and functional in vivo studies.
- Characterized basic mechanisms of bi-directional microtubule-based motility of membrane organelles such as cell nuclei and exocytotic vesicles, and identified the mechanisms of molecular motor recruitment to membranes.
- Used advanced microscopy approaches such as laser microsurgery in combination with in vitro reconstitution to identify the mechanistic basis of a major pathway for microtubule minus-end stabilization in mammalian cells
- Revealed the mechanistic basis of human neurodevelopmental syndrome Congenital Fibrosis of the Extraocular Muscles (CFEOM1)
- Demonstrated the importance of microtubule plus end dynamics for cancer cell motility in 3D and cancer metastasis
- Revealed the role of the major microcephaly-related factors, ASPM and katanin, in regulation of minus end dynamics at spindle poles and the mitotic spindle architecture
- Identified the molecular mechanism of microtubule minus-end binding by the members of CAMSAP family of proteins
- Provided insights into the activity of microtubule-targeting cancer therapy agents by directly imaging the interactions of their fluorescent analogues with microtubules

Research output in numbers

- 232 publications (research papers, reviews and editorials) in peer-reviewed journals

- 16 PhD students completed their PhD within Akhmanova group

Membership of scientific committees

2022 Member of the NWO ENW VICI committee

2020 Member of the NWO ENW VICI and Incentive Grants for Women in STEM committees

2019 Chair of the Cell&Developmental Biology panel ATIP Avenir young group leader program, Inserm and CNRS, France; Chair KNAW selection committee MMBG domain, member of the NWO ENW VICI committee

2018 Chair of the ERC LS3 Starting grant panel, Chair KNAW selection committee MMBG domain, NWO ZonMW VIDI committee,

2017 KNAW selection committee MMBG domain, NWO ZonMW VIDI committee,

2016 Chair of the ERC LS3 Starting grant panel, member of the ERC Advanced panel, committee member EMBO Long Term Fellowship, NWO ZonMW VIDI committee, member of the Scientific Advisory Board of the Netherlands Institute for Neuroscience.

2015 EMBO Long Term Fellowship, NWO VENI committee, member of the Scientific Advisory Board of the Netherlands Institute for Neuroscience.

2014 Grant Panel member and vice-chair for ERC Starting Grant, Agence Nationale de la Recherche France, AERES evaluation committee of Curie Institute Genotoxic Stress and Cancer unit, EMBO Long Term Fellowship, Faculty Search committee Curie Institute France

2013 Agence Nationale de la Recherche France, Academy of Finland, EMBO Long Term Fellowship.

2012 Grant Panel member for ERC Starting Grant, Agence Nationale de la Recherche France, Academy of Finland EMBO Long Term Fellowship, Netherlands Organisation for Scientific Research ALW (Earth and Life Sciences) Open program, Faculty search committee Curie Institute France; Faculty Search Committee ETH Zurich, Switzerland.

2011 Member of the Jury of the FOM projects (Netherlands Organisation for Scientific Research, Physics).

2009 Evaluator and committee member for the EU 7th Framework Programme in the area of Systems Biology

2008, 2009 Member of the Advisory Committee (Benoemingsadviescommissie (BAC)) Bionanoscience TU Delft

2007, 2008 Member of the Netherlands Organisation for Scientific Research (NWO) Mosaic advisory committee, which awards PhD grants for national minorities in the Netherlands

Membership in Scientific Advisory Boards

2016-current: Netherlands Institute for Neuroscience, Amsterdam, the Netherlands,

2017-current: Instituto de Investigação e Inovação em Saúde (i3S), Porto, Portugal

2019 Evaluation committee by the Scientific Advisory Board CRG Cell and Developmental Biology programme Barcelona, Spain (2019).

Editorial activities

- Elife, Deputy Editor 2018-2023, currently Senior Editor
- Current Opinion in Cell Biology, Guest Editor 2012, Editorial Board member 2017-present
- Journal of Cell Science, Editorial Advisory Board Member
- PLoS Biology, Editorial Board Member
- Journal of Biological Chemistry, Reviewing Editor 2014-2016

- Encyclopedia of Cell Biology, Section Editor 2014

Organization of Scientific Meetings

2022, 2020, 2018. Organisation of the EMBO/EMBL Symposium “Microtubules: From Atoms to Complex Systems”, Heidelberg, Germany.

2014-2017. Organisation of QBio Summer School, July 14-18, 2014, Utrecht University.

2014. Biophysical Society meeting "Disordered Motifs and Domains in Cell Control", Dublin, Ireland.

2011-2017 Organisation of the Joint Annual meeting of the Dutch Microscopy Society (NVvM) and the “Dutch meeting on Molecular and Cellular Biophysics”, Veldhoven, the Netherlands

2009, 2010. Member of the program committee for the “Dutch meeting on Molecular and Cellular Biophysics”, Veldhoven, the Netherlands.

2006. Invited co-chair of the minisymposium “Life at the Microtubule Plus End” at the American Society for Cell Biology (ASCB) Annual Meeting, San Diego, USA.

2005. Invited co-chair of the minisymposium “The Cytoskeleton” at the European Life Scientist Organisation Meeting (ELSO), Dresden, Germany.

Publications

1. Nick Maleki A, Huis In 't Veld PJ, **Akhmanova A**, Dogterom M, and Volkov VA. Estimation of microtubule-generated forces using a DNA origami nanospring. **J Cell Sci**, 2023. 136.
2. Willekers S, Tessadori F, van der Vaart B, Henning HH, Stucchi R, Altelaar M, Roelen BAJ, **Akhmanova A**, and Bakkers J. The centriolar satellite protein Cfp53 facilitates formation of the zygotic microtubule organizing center in the zebrafish embryo. **Development**, 2022. 149.
3. Noordstra I, van den Berg CM, Boot FWJ, Katrukha EA, Yu KL, Tas RP, Portegies S, Viergever BJ, de Graaff E, Hoogenraad CC, de Koning EJP, Carlotti F, Kapitein LC, and **Akhmanova A**. Organization and dynamics of the cortical complexes controlling insulin secretion in beta-cells. **J Cell Sci**, 2022. 135.
4. Morthorst SK, Nielsen C, Farinelli P, Anvarian Z, Rasmussen CBR, Serra-Marques A, Grigoriev I, Altelaar M, Furstenberg N, Ludwig A, **Akhmanova A**, Christensen ST, and Pedersen LB. Angiomotin isoform 2 promotes binding of PALS1 to KIF13B at primary cilia and regulates ciliary length and signaling. **J Cell Sci**, 2022. 135.
5. Meiring JCM, Grigoriev I, Nijenhuis W, Kapitein LC, and **Akhmanova A**. Opto-katanin, an optogenetic tool for localized, microtubule disassembly. **Curr Biol**, 2022.
6. Gao L, Meiring JCM, Varady A, Ruider IE, Heise C, Wranik M, Velasco CD, Taylor JA, Terni B, Weinert T, Standfuss J, Cabernard CC, Llobet A, Steinmetz MO, Bausch AR, Distel M, Thorn-Seshold J, **Akhmanova A**, and Thorn-Seshold O. In Vivo Photocontrol of Microtubule Dynamics and Integrity, Migration and Mitosis, by the Potent GFP-Imaging-Compatible Photoswitchable Reagents SBTubA4P and SBTub2M. **J Am Chem Soc**, 2022. 144: 5614-5628.
7. Gao L, Meiring JCM, Heise C, Rai A, Muller-Deku A, **Akhmanova A**, Thorn-Seshold J, and Thorn-Seshold O. Photoswitchable Epothilone-Based Microtubule Stabilisers Allow GFP-Imaging-Compatible, Optical Control over the Microtubule Cytoskeleton. **Angew Chem Int Ed Engl**, 2022. 61: e202114614.
8. Eisen MB, **Akhmanova A**, Behrens TE, Diedrichsen J, Harper DM, Iordanova MD, Weigel D, and Zaidi M. Peer review without gatekeeping. **Elife**, 2022. 11.
9. Dusza HM, Katrukha EA, Nijmeijer SM, **Akhmanova A**, Vethaak AD, Walker DI, and Legler J. Uptake, Transport, and Toxicity of Pristine and Weathered Micro- and Nanoplastics in Human Placenta Cells. **Environ Health Perspect**, 2022. 130: 97006.
10. Damstra HGJ, Mohar B, Eddison M, **Akhmanova A**, Kapitein LC, and Tillberg PW. Visualizing cellular and tissue ultrastructure using Ten-fold Robust Expansion Microscopy (TReX). **Elife**, 2022. 11.

11. Chen F, Wu J, Iwanski MK, Jurriens D, Sandron A, Pasolli M, Puma G, Kromhout JZ, Yang C, Nijenhuis W, Kapitein LC, Berger F, and **Akhmanova A**. Self-assembly of pericentriolar material in interphase cells lacking centrioles. **Elife**, 2022. 11.
12. Alkemade C, Wierenga H, Volkov VA, Preciado Lopez M, **Akhmanova A**, Ten Wolde PR, Dogterom M, and Koenderink GH. Cross-linkers at growing microtubule ends generate forces that drive actin transport. **Proc Natl Acad Sci U S A**, 2022. 119: e2112799119.
13. **Akhmanova A** and Kapitein LC. Mechanisms of microtubule organization in differentiated animal cells. **Nat Rev Mol Cell Biol**, 2022. 23: 541-558.
14. Zaidi M, Harper DM, **Akhmanova A**, Weigel D, Behrens TE, and Eisen MB. Rigorous review and editorial oversight of clinical preprints. **Elife**, 2021. 10.
15. Sailer A, Meiring JCM, Heise C, Pettersson LN, **Akhmanova A**, Thorn-Seshold J, and Thorn-Seshold O. Pyrrole Hemithioindigo Antimitotics with Near-Quantitative Bidirectional Photoswitching that Photocontrol Cellular Microtubule Dynamics with Single-Cell Precision*. **Angew Chem Int Ed Engl**, 2021. 60: 23695-23704.
16. Rimmelzwaal S, Geisler F, Stucchi R, van der Horst S, Pasolli M, Kroll JR, Jarosinska OD, **Akhmanova A**, Richardson CA, Altelaar M, Leube RE, Ramalho JJ, and Boxem M. BBLN-1 is essential for intermediate filament organization and apical membrane morphology. **Curr Biol**, 2021. 31: 2334-2346 e9.
17. Rai A, Liu T, Katrukha EA, Estevez-Gallego J, Manka SW, Paterson I, Diaz JF, Kapitein LC, Moores CA, and **Akhmanova A**. Lattice defects induced by microtubule-stabilizing agents exert a long-range effect on microtubule growth by promoting catastrophes. **Proc Natl Acad Sci U S A**, 2021. 118.
18. Luo Y, Xiang S, Paioni AL, Adler A, Hooikaas PJ, Jijumon AS, Janke C, **Akhmanova A**, and Baldus M. Solid-State NMR Spectroscopy for Studying Microtubules and Microtubule-Associated Proteins. **Methods Mol Biol**, 2021. 2305: 193-201.
19. Gros OJ, Damstra HGJ, Kapitein LC, **Akhmanova A**, and Berger F. Dynein self-organizes while translocating the centrosome in T-cells. **Mol Biol Cell**, 2021. 32: 855-868.
20. Gao L, Meiring JCM, Kraus Y, Wranik M, Weinert T, Pritzl SD, Bingham R, Ntoulidou E, Jansen KI, Olieric N, Standfuss J, Kapitein LC, Lohmuller T, Ahlfeld J, **Akhmanova A**, Steinmetz MO, and Thorn-Seshold O. A Robust, GFP-Orthogonal Photoswitchable Inhibitor Scaffold Extends Optical Control over the Microtubule Cytoskeleton. **Cell Chem Biol**, 2021. 28: 228-241 e6.
21. Cowell AR, Jacquemet G, Singh AK, Varela L, Nylund AS, Ammon YC, Brown DG, **Akhmanova A**, Ivaska J, and Goult BT. Talin rod domain-containing protein 1 (TLNRD1) is a novel actin-bundling protein which promotes filopodia formation. **J Cell Biol**, 2021. 220.
22. Buijs RR, Hummel JJA, Burute M, Pan X, Cao Y, Stucchi R, Altelaar M, **Akhmanova A**, Kapitein LC, and Hoogenraad CC. WDR47 protects neuronal microtubule minus ends from katanin-mediated severing. **Cell Rep**, 2021. 36: 109371.
23. Yao Y, Smal I, Grigoriev I, **Akhmanova A**, and Meijering E. Deep-learning method for data association in particle tracking. **Bioinformatics**, 2020. 36: 4935-4941.
24. Serra-Marques A, Martin M, Katrukha EA, Grigoriev I, Peeters CA, Liu Q, Hooikaas PJ, Yao Y, Solianova V, Smal I, Pedersen LB, Meijering E, Kapitein LC, and **Akhmanova A**. Concerted action of kinesins KIF5B and KIF13B promotes efficient secretory vesicle transport to microtubule plus ends. **Elife**, 2020. 9.
25. Saraon P, Snider J, Kalaidzidis Y, Wybenga-Groot LE, Weiss K, Rai A, Radulovich N, Drecun L, Vuckovic N, Vucetic A, Wong V, Theriault B, Pham NA, Park JH, Datti A, Wang J, Pathmanathan S, Aboualizadeh F, Lyakisheva A, Yao Z, Wang Y, Joseph B, Aman A, Moran MF, Prakesch M, Poda G, Marcellus R, Uehling D, Samarzija M, Jakopovic M, Tsao MS, Shepherd FA, Sacher A, Leighl N, **Akhmanova A**, Al-Awar R, Zerial M, and Stagljar I. A drug discovery platform to identify compounds that inhibit EGFR triple mutants. **Nat Chem Biol**, 2020. 16: 577-586.
26. Rodriguez-Garcia R, Volkov VA, Chen CY, Katrukha EA, Olieric N, Aher A, Grigoriev I, Lopez MP, Steinmetz MO, Kapitein LC, Koenderink G, Dogterom M, and **Akhmanova A**. Mechanisms of Motor-Independent Membrane Remodeling Driven by Dynamic Microtubules. **Curr Biol**, 2020. 30: 972-987 e12.
27. Rai A, Liu T, Glauser S, Katrukha EA, Estevez-Gallego J, Rodriguez-Garcia R, Fang WS, Diaz JF, Steinmetz MO, Altmann KH, Kapitein LC, Moores CA, and **Akhmanova A**. Taxanes convert regions of perturbed microtubule growth into rescue sites. **Nat Mater**, 2020. 19: 355-365.

28. Peronne L, Denarier E, Rai A, Prudent R, Vernet A, Suzanne P, Ramirez-Rios S, Michallet S, Guidetti M, Vollaire J, Lucena-Agell D, Ribba AS, Josserand V, Coll JL, Dallemagne P, Diaz JF, Oliva MA, Sadoul K, **Akhmanova A**, Andrieux A, and Lafanechere L. Two Antagonistic Microtubule Targeting Drugs Act Synergistically to Kill Cancer Cells. **Cancers (Basel)**, 2020. 12.
29. Muller-Deku A, Meiring JCM, Loy K, Kraus Y, Heise C, Bingham R, Jansen KI, Qu X, Bartolini F, Kapitein LC, **Akhmanova A**, Ahlfeld J, Trauner D, and Thorn-Seshold O. Photoswitchable paclitaxel-based microtubule stabilisers allow optical control over the microtubule cytoskeleton. **Nat Commun**, 2020. 11: 4640.
30. Meiring JCM, Shneyer BI, and **Akhmanova A**. Generation and regulation of microtubule network asymmetry to drive cell polarity. **Curr Opin Cell Biol**, 2020. 62: 86-95.
31. Meiring JCM and **Akhmanova A**. Microtubules keep large cells in shape. **J Cell Biol**, 2020. 219.
32. Luo Y, Xiang S, Hooikaas PJ, van Bezouwen L, Jijumon AS, Janke C, Forster F, **Akhmanova A**, and Baldus M. Direct observation of dynamic protein interactions involving human microtubules using solid-state NMR spectroscopy. **Nat Commun**, 2020. 11: 18.
33. Jost M, Chen Y, Gilbert LA, Horlbeck MA, Krenning L, Menchon G, Rai A, Cho MY, Stern JJ, Prota AE, Kampmann M, **Akhmanova A**, Steinmetz MO, Tanenbaum ME, and Weissman JS. Pharmaceutical-Grade Rigosertib Is a Microtubule-Destabilizing Agent. **Mol Cell**, 2020. 79: 191-198 e3.
34. Hooikaas PJ, Damstra HG, Gros OJ, van Riel WE, Martin M, Smits YT, van Loosdregt J, Kapitein LC, Berger F, and **Akhmanova A**. Kinesin-4 KIF21B limits microtubule growth to allow rapid centrosome polarization in T cells. **Elife**, 2020. 9.
35. Eisen MB, **Akhmanova A**, Behrens TE, and Weigel D. Publishing in the time of COVID-19. **Elife**, 2020. 9.
36. Eisen MB, **Akhmanova A**, Behrens TE, Harper DM, Weigel D, and Zaidi M. Implementing a "publish, then review" model of publishing. **Elife**, 2020. 9.
37. Aher A, Rai D, Schaedel L, Gaillard J, John K, Liu Q, Altelaar M, Blanchoin L, Thery M, and **Akhmanova A**. CLASP Mediates Microtubule Repair by Restricting Lattice Damage and Regulating Tubulin Incorporation. **Curr Biol**, 2020. 30: 2175-2183 e6.
38. Adriaans IE, Hooikaas PJ, Aher A, Vromans MJM, van Es RM, Grigoriev I, **Akhmanova A**, and Lens SMA. MKLP2 Is a Motile Kinesin that Transports the Chromosomal Passenger Complex during Anaphase. **Curr Biol**, 2020. 30: 2628-2637 e9.
39. Yu M, Le S, Ammon YC, Goult BT, **Akhmanova A**, and Yan J. Force-Dependent Regulation of Talin-KANK1 Complex at Focal Adhesions. **Nano Lett**, 2019. 19: 5982-5990.
40. van de Willige D, Hummel JJ, Alkemade C, Kahn OI, Au FK, Qi RZ, Dogterom M, Koenderink GH, Hoogenraad CC, and **Akhmanova A**. Cytolinker Gas2L1 regulates axon morphology through microtubule-modulated actin stabilization. **EMBO Rep**, 2019. 20: e47732.
41. Pan X, Cao Y, Stucchi R, Hooikaas PJ, Portegies S, Will L, Martin M, **Akhmanova A**, Harterink M, and Hoogenraad CC. MAP7D2 Localizes to the Proximal Axon and Locally Promotes Kinesin-1-Mediated Cargo Transport into the Axon. **Cell Rep**, 2019. 26: 1988-1999 e6.
42. Jespersen N, Estelle A, Waugh N, Davey NE, Blikstad C, Ammon YC, **Akhmanova A**, Ivarsson Y, Hendrix DA, and Barbar E. Systematic identification of recognition motifs for the hub protein LC8. **Life Sci Alliance**, 2019. 2.
43. Hooikaas PJ, Martin M, Muhlethaler T, Kuijntjes GJ, Peeters CAE, Katrukha EA, Ferrari L, Stucchi R, Verhagen DGF, van Riel WE, Grigoriev I, Altelaar AFM, Hoogenraad CC, Rudiger SGD, Steinmetz MO, Kapitein LC, and **Akhmanova A**. MAP7 family proteins regulate kinesin-1 recruitment and activation. **J Cell Biol**, 2019. 218: 1298-1318.
44. Frikstad KM, Molinari E, Thoresen M, Ramsbottom SA, Hughes F, Letteboer SJF, Gilani S, Schink KO, Stokke T, Geimer S, Pedersen LB, Giles RH, **Akhmanova A**, Roepman R, Sayer JA, and Patzke S. A CEP104-CSPP1 Complex Is Required for Formation of Primary Cilia Competent in Hedgehog Signaling. **Cell Rep**, 2019. 28: 1907-1922 e6.
45. Freal A, Rai D, Tas RP, Pan X, Katrukha EA, van de Willige D, Stucchi R, Aher A, Yang C, Altelaar AFM, Vocking K, Post JA, Harterink M, Kapitein LC, **Akhmanova A**, and Hoogenraad CC. Feedback-Driven Assembly of the Axon Initial Segment. **Neuron**, 2019. 104: 305-321 e8.
46. Faltova L, Jiang K, Frey D, Wu Y, Capitani G, Prota AE, **Akhmanova A**, Steinmetz MO, and Kammerer RA. Crystal Structure of a Heterotetrameric Katanin p60:p80 Complex. **Structure**, 2019. 27: 1375-1383 e3.

47. Atherton J, Luo Y, Xiang S, Yang C, Rai A, Jiang K, Stangier M, Vemu A, Cook AD, Wang S, Roll-Mecak A, Steinmetz MO, **Akhmanova A**, Baldus M, and Moores CA. Structural determinants of microtubule minus end preference in CAMSAP CKK domains. **Nat Commun**, 2019. 10: 5236.
48. **Akhmanova A** and Steinmetz MO. Microtubule minus-end regulation at a glance. **J Cell Sci**, 2019. 132.
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50. Martin M, Veloso A, Wu J, Katrukha EA, and **Akhmanova A**. Control of endothelial cell polarity and sprouting angiogenesis by non-centrosomal microtubules. **Elife**, 2018. 7.
51. Martin M and **Akhmanova A**. Coming into Focus: Mechanisms of Microtubule Minus-End Organization. **Trends Cell Biol**, 2018. 28: 574-588.
52. Jiang K, Faltova L, Hua S, Capitani G, Prota AE, Landgraf C, Volkmer R, Kammerer RA, Steinmetz MO, and **Akhmanova A**. Structural Basis of Formation of the Microtubule Minus-End-Regulating CAMSAP-Katanin Complex. **Structure**, 2018. 26: 375-382 e4.
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54. Fielmich LE, Schmidt R, Dickinson DJ, Goldstein B, **Akhmanova A**, and van den Heuvel S. Optogenetic dissection of mitotic spindle positioning in vivo. **Elife**, 2018. 7.
55. **Akhmanova A** and Hoogenraad CC. More is not always better: hyperglutamylation leads to neurodegeneration. **EMBO J**, 2018. 37.
56. **Akhmanova A**. Strengthening Microtubules by Cuts that Heal. **Dev Cell**, 2018. 47: 400-401.
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58. Aher A and **Akhmanova A**. Tipping microtubule dynamics, one protofilament at a time. **Curr Opin Cell Biol**, 2018. 50: 86-93.
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60. Yang C, Wu J, de Heus C, Grigoriev I, Liv N, Yao Y, Smal I, Meijering E, Klumperman J, Qi RZ, and **Akhmanova A**. EB1 and EB3 regulate microtubule minus end organization and Golgi morphology. **J Cell Biol**, 2017. 216: 3179-3198.
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62. van Riel WE, Rai A, Bianchi S, Katrukha EA, Liu Q, Heck AJ, Hoogenraad CC, Steinmetz MO, Kapitein LC, and **Akhmanova A**. Kinesin-4 KIF21B is a potent microtubule pausing factor. **Elife**, 2017. 6.
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- LxxPTPh Targets Diverse Proteins to Growing Microtubule Ends. **Structure**, 2017. 25: 924-932 e4.
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Invited lectures at national and international conferences:

1. Course “Tissue and cell size homeostasis and cell growth regulation”, the Curie Institute, Paris, France, 2022
2. Keynote lecture Groningen Biomolecular Sciences & Biotechnology Institute (GBB) Annual Symposium, 2022
3. Centrosomes and spindle pole bodies, EMBO Workshop, Copenhagen, Denmark, 2021
4. Dutch Biophysics, plenary lecture, virtual, 2021
5. Seeing is Believing: Imaging the Molecular Processes of Life, EMBO | EMBL Symposium, virtual, 2021.
6. Collaborative Research Center 944 "Physiology & Dynamics of Cellular Microcompartments", Osnabrück, Germany, 2021.
7. Horizons in Molecular Biology, Göttingen, Germany, virtual, 2021.
8. Congress of the Spanish Biochemical and Molecular Biology Society, FEBS National lecture, virtual, 2021.
9. FEBS Virtual Congress, 2021.
10. Course “Tissue and cell size homeostasis and cell growth regulation”, the Curie Institute, Paris, France, virtual, 2021.
11. Cell polarity and membrane dynamics, EMBO workshop, virtual, 2021.
12. Cell Bio Virtual: An Online ASCB|EMBO Meeting, 2020.
13. Keynote Lecture, S4L conference, Utrecht, the Netherlands, 2020- online.
14. IndiaBioscience Young Investigator’s Meeting, Mahabalipuram, India, 2020.
15. Keynote lecture, KWF Cancer Biology meeting, Lunteren, the Netherlands, 2019.
16. Mechano-chemical signals in invasion – The Invadosome Consortium, University of Roehampton, London, UK, 2019.
17. Advances in Biomedical Research, Split, Croatia, 2019.
18. From Pole to Pole - DivIDE conference, Barcelona, Spain, 2019.
19. Cell Dynamics: Organelle-Cytoskeleton Interface, Lisbon, Portugal, 2019.
20. Keynote lecture, 6th Zoo meeting: Cell Adhesion and Migration in Inflammation and Cancer, Rotterdam, the Netherlands, 2019
21. Keynote lecture, Annual Meeting Experimental Plant Sciences, Lunteren, the Netherlands, 2019
22. EMBO Keynote Lecture LS2 Annual Meeting Cell Biology from Tissue to Nucleus, Zurich, Switzerland, 2019
23. Reconstitution of the Cytoskeleton In Vitro, Company of Biologists Workshop, Wiston House, UK, 2019.
24. Plenary lecture at the American Society for Cell Biology Annual Meeting, San Diego, USA, 2018.
25. Plenary lecture at the Dutch Chemistry Conference CHAINS 2018, Veldhoven, the Netherlands, 2018
26. Annual CGC & Oncode conference 'From tissues, to cells to molecules: multi-scale visualization of cancer processes' Amsterdam, the Netherlands 2018
27. Keynote Lecture at the 33rd European Cytoskeletal Forum Meeting on "Biology and pathology of the cytoskeleton: the crossroads of three cytoskeletal systems", Prague 2018.
28. Physical Biology of Integrated Systems Meeting, Cargese, Corsica, France, 2018.
29. BioCity symposium "Seeing the invisible", Turku, Finland, 2018
30. Keynote Lecture at the Israeli Forum for Cytoskeleton and cell motility (IFCM), Weizmann Institute, Rehovot, 2018.
31. Plenary Lecture at the 3rd International Symposium on Mechanobiology, 2017, Singapore.

32. Keynote lecture at the EMBO meeting “Frontiers in cytoskeleton research”, 2017, Pune, India.
33. EMBO/EMBL Symposium “Mechanical Forces in Biology”, 2017, Heidelberg, Germany.
34. FEBS Advanced Course “Functional imaging of cellular signals”, 2017, Amsterdam, the Netherlands.
35. Journal of Cell Science conference “Cellular dynamics: membrane-cytoskeleton interface”, 2017, Southbridge, USA.
36. BSDB, BSCB and Genetics Society Joint Meeting, 2017, University of Warwick, UK
37. EMBO Conference Series “Cilia”, 2016, Amsterdam, the Netherlands.
38. Keynote lecture at the Gordon Research conference Muscles and Molecular Motors, Mount Snow resort, West Dover, USA, July 2016
39. EMBO Conference Series “Microtubules - Structure, Regulation and Functions”, 2016, Heidelberg, Germany.
40. 14th CRG Symposium – Cellular Machineries, Barcelona, Spain, October 2015
41. EPFL Life Sciences Symposium, Lausanne, Switzerland, September 2015
42. European Cytoskeleton Forum 2015, Postojna, Slovenia, September 2015
43. Microscience Microscopy Congress, MMC2015, Manchester, UK, July 2015.
44. FASEB conference “Mitosis: Spindle Assembly and Function”, Big Sky, Montana, USA
45. CNRS conference “Actin and microtubule cytoskeleton in cell motility and morphogenesis: An integrated view”, Roscoff, France, May 2015
46. 1st International SBCF Meeting “Building the Cell”, Paris, France. September 25, 2014
47. Biophysical Society Thematic meeting “Disordered Motifs and Domains in Cell Control”, October 11-15, 2014, Dublin, Ireland. October 2014
48. Gordon Research conference Muscles and Molecular Motors, 2014, Mount Snow resort, West Dover, USA
49. Gordon Research conference Signaling by Adhesion Receptors, 2014, Bates College, Lewiston, USA
50. Bijvoet Tutorial Symposium, Soesterberg, the Netherlands.
51. Symposium “Life Simplified”, 2014, AMOLF, Amsterdam, the Netherlands.
52. IGC PhD Course on Structural and Molecular Biology. “Regulation of Microtubule Cytoskeleton”, 2014, Oeiras, Portugal.
53. 3rd Symposium on Physiology and Dynamics of Cellular Microcompartments, 2013, Utrecht, the Netherlands.
54. The 5th EMBO meeting, 2013, Amsterdam, the Netherlands
55. The British Society for Cell Biology meeting on Mechanochemical Cell Biology, 2013, Windermere, UK.
56. Gordon Research conference on Motile & Contractile Systems, 2013, New London, USA.
57. Gordon Research conference on Molecular Membrane Biology, 2013, Proctor Academy, USA.
58. ICTS-TIFR Advanced School on Axonal Transport and Neurodegenerative Disorders, 2013, IIT-Bombay, India.
59. Hunter Cellular Biology meeting, 2012, Pokolbin, Hunter valley, Australia.
60. European Microscopy Congress, 2012, Manchester, UK.
61. International Conference “Linking the Nuclear Envelope to the Cytoskeleton”, 2011, Fondation Les Treilles, France.
62. EMBO conference “Dynamic Endosomes: Mechanisms Controlling Endocytosis”, 2011 Crete, Greece.
63. EMBO members workshop, 2011, Heidelberg, Germany.

64. ASCB Annual Meeting, 2011, 3-7 December, Denver, Colorado, USA. Subgroup Meeting "Posttranslational Regulation of the Cytoskeleton".
65. Dutch Cell Biology meeting "Molecular Cell Dynamics", 2010, Amsterdam, The Netherlands.
66. International Workshop "Mechanisms of cytoskeleton dynamics and intracellular trafficking", 2010, Warsaw, Poland.
67. ESF-EMBO Symposium "Emergent Properties of the Cytoskeleton", 2010, Sant Feliu, Spain.
68. INSERM Workshop "Microtubule dynamics in cell migration", 2010, Saint-Raphael, France.
69. FEBS/EMBO Lecture course "The Cytoskeleton in Development and Pathology", 2010, Djurönäs, Stockholm, Sweden.
70. Lecture course "Cytoskeleton in Cell Division and Migration", Institut Curie in Paris 2010, Paris, France.
71. EMBO Conference Series "Microtubules - Structure, Regulation and Functions", 2010, Heidelberg, Germany.
72. 8th EMBO-Annaberg Conference "Protein and Lipid Function in secretion and endocytosis", 2010, Goldegg, Austria
73. Keynote lecture for the 12th "Young Researchers and Life Science" meeting, 2009, Paris, France.
74. Annual meeting of the Japanese Molecular Biology Society, 2009, Yokohama, Japan.
75. Annual Meeting of the Dutch Microscopy Society (NVvM), 2009, Amsterdam, The Netherlands.
76. CRG Symposium "Imaging approaches to study cytoskeleton dynamics", 2009, Barcelona, Spain.
77. 3rd Mechanobiology Workshop, 2009, Singapore.
78. Annual Dutch Meeting on Molecular and Cellular Biophysics 2009, Veldhoven, The Netherlands
79. Gordon Research conference on Molecular Membrane Biology, 2009, Proctor Academy, USA.
80. Gordon Research conference on Motile & Contractile Systems, 2009, New London, USA.
81. "The Dynamic Cell" meeting of the Biochemical Society and the British Society for Cell Biology, 2009, Edinburgh, UK.
82. 1st Joint Meeting of the German and Swiss Societies of Cell Biology (DGZ/ZMG), 2009, Konstanz, Germany.
83. Subgroup meeting at the European Life Scientist Organisation Meeting, 2008, Nice, France.
84. MCRI Microtubule Dynamics Workshop, 2008, Oxted, UK.
85. Subgroup meeting, American Society for Cell Biology Annual Meeting 2007, Washington DC, USA.
86. Gordon Research conference on Motile & Contractile Systems, 2007, New London, USA.
87. Minisymposium, American Society for Cell Biology Annual Meeting 2006, San Diego, USA.
88. Minisymposium, 78th Annual Meeting of the Japanese Biochemical Society, 2005, Kobe, Japan.
89. Minisymposium, American Society for Cell Biology Annual Meeting 2004, Washington DC, USA.
90. Subgroup meeting, American Society for Cell Biology Annual Meeting 2004, Washington DC, USA.

91. Minisymposium, European Life Scientist Organisation Meeting, 2003, Dresden, Germany.

Invited seminars:

1. Institute of Molecular Biology, University of Oregon, USA, October 2022, online.
2. Francis Crick Institute, London, UK, March 2022.
3. National Institutes of Health, NHLBI Cell & Developmental Biology Center, December 2021, online
4. University of Oxford, UK, February 2021 - online
5. University of Sheffield, UK, November 2020 – online.
6. Centre for Mechanochemical Cell Biology, Motors in Quarantine – Meet -Your-Heroes. University of Warwick, UK; October 2020 – online.
7. McGill University, Canada, October 2020 – online.
8. EMBO Global Lecture, Institute for Stem Cell Science and Regenerative Medicine (inStem), Bangalore, February 2020.
9. EMBO Global Lecture, Indian Institute of Science Bangalore, India, February 2020.
10. EMBO Global Lecture, Tata Institute of Fundamental Research, Mumbai, India, February 2020.
11. Indian Institute of Technology Bombay, India, February 2020.
12. Janelia Research Campus, USA, January 2020.
13. IST Austria, Klosterneuburg, Austria, December 2019.
14. Ruysch Lecture, Amsterdam UMC, Amsterdam, June 2019.
15. The Rockefeller University, New York, March 2019.
16. National Institutes of Health, Bethesda, March 2019.
17. The University of North Carolina at Chapel Hill, March 2019.
18. Vanderbilt University, Nashville, USA, March 2019.
19. UT Southwestern, Dallas, USA, March 2019.
20. Kings College London, UK, March 2019.
21. University of Nottingham, UK, November 2018.
22. Institute of Human Genetics, France, June 2018.
23. London Molecular Cancer Seminar series, Queen Mary University of London, UK, 2018
24. École Polytechnique Fédérale de Lausanne (EPFL), Switzerland, June 2018
25. University of Munster, Germany, April 2018
26. Tel Aviv University, Israel, March 2018
27. Ben-Gurion University of the Negev, Beer-Sheva, Israel, March 2018
28. The Francis Crick Institute, London, UK, February 2018
29. University of Kent, Canterbury, UK, June 2017
30. Leiden University, the Netherlands, June 2017
31. University of British Columbia, Vancouver, Canada, May 2017
32. GIGA research centre, University of Liège, Belgium, March 2017
33. Brandeis University, Waltham, USA, July 2016
34. Instituto Gulbenkian de Ciência, Oeiras, Portugal, July 2016
35. IST Austria, Klosterneuburg, Austria, April 2016
36. University of Edinburgh, UK, March 2013
37. Institut Pasteur, Paris, France, February 2016
38. Physiology course at Marine Biological Laboratory, Woods Hole, USA, June 2015
39. University of California Berkley, USA, May 2015
40. University of California San Francisco, USA, May 2015
41. University of California San Diego, USA, May 2015

42. University of California Davis, USA, May 2015
43. Radboud University Medical Center, Nijmegen, the Netherlands, 2014.
44. ETH Zurich, Switzerland, 2014.
45. Institut Albert Bonniot, Grenoble, France, 2014.
46. University of Illinois at Chicago, Chicago, USA 2014
47. Northwestern University, Chicago, USA, June 2014
48. University of Pennsylvania, Philadelphia, USA, April 2014.
49. Scripps Research Institute, San Diego, USA, April 2014.
50. Institute Curie, Orsay, France, February 2014.
51. Instituto Gulbenkian de Ciência, Oeiras, Portugal, January 2014.
52. CRG-Center for Genomic Regulation, Barcelona, Spain, June 2013.
53. Medical University Innsbruck, Austria, April 2013.
54. Department of Genetics, University of Cambridge, March 2013
55. University of Turku, Finland, February 2013
56. Tata Institute of Fundamental Research, Mumbai, India, 2013
57. Charité - Universitätsmedizin Berlin, Berlin, Germany, June 2012
58. Temasek Lifesciences Laboratory, Singapore, April 2012.
59. University of Liverpool, UK, March 2013
60. Centre for Mechanochemical Cell Biology, Warwick Medical School, UK, January 2012
61. University of Antwerp, Belgium, January 2012
62. Institut Cochin, Paris, France, November 2011
63. Department of Zoology, University of Cambridge, UK, May 2011
64. Faculty of Life Sciences, University of Manchester, UK, March 2011
65. Wadsworth Center, Albany, USA, December 2010
66. IMP-Research Institute of Molecular Pathology, Vienna, Austria, April 2010
67. University College London, UK, April 2010
68. Nagoya University, Japan, December 2009
69. RIKEN Center for Developmental Biology (CDB), Kobe, Japan, December 2009
70. Physiology course at Marine Biological Laboratory, Woods Hole, USA, July 2009
71. Max-Planck-Institute of Neurobiology, Martinsried, Germany, June 2009
72. Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany, March 2009
73. University of Copenhagen, Denmark, March 2009
74. Centre de Recherches de Biochimie, Montpellier, France, November 2008
75. University of Wageningen, The Netherlands; October 2008
76. Helmholtz Zentrum für Infektionsforschung, Braunschweig, Germany; February 2008
77. Georg-August-Universität Göttingen, Germany; January 2008
78. University of Groningen, The Netherlands; December 2007
79. The Johns Hopkins University, USA; December 2007
80. National Heart, Lung and Blood Institute, National Institutes of Health, Bethesda, USA; December 2007
81. University Medical Center Utrecht, The Netherlands; November 2007
82. Harvard Medical School, Boston, USA; July 2007
83. University of Pennsylvania, Philadelphia, USA; July 2007
84. University of Connecticut Health Center, Farmington, USA; July 2007
85. Marie Curie Research Institute, Oxted, United Kingdom; June 2007
86. Vanderbilt University Medical Center, Nashville, USA, December; 2006.
87. Paul Scherrer Institut, Villigen, Switzerland; October 2006
88. Wellcome Trust Centre for Cell Biology, University of Edinburgh, United Kingdom; June

2006.

89. Institut Curie, Paris, France; April 2006.
90. The Netherlands Cancer Institute, Amsterdam, The Netherlands; January 2006.
91. Kyoto University, Kyoto, Japan; October 2005.
92. Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany; February 2003.
93. Northwestern University Medical School, Chicago, USA; June 2003.
94. Institute of Molecular Biology, Salzburg, Austria; July 2002.