## **Curriculum Vitae – Eva Nogales**

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**EDUCATION AND TRAINING**

1993 – 95 Postdoctoral training in Biophysics at the Life Sciences Division, Lawrence Berkeley National Laboratory (LBNL). Advisor: Dr. Kenneth H. Downing.

1993 Ph.D. in Biophysics by the Physics Department of Keele University, UK. Advisor: Dr. Joan Bordas, SRS, Daresbury Laboratory.

## 1988 B.S. in Physics by the Universidad Autónoma de Madrid, Spain

**POSITIONS**

## 09/20 – present **Co-director**, Cal Cryo Facility, UC Berkeley

## 08/16 – 08/20 Head, Bay Area Cryo-EM Facility (BACEM), Berkeley Site

## 12/15 – present **Senior Faculty Scientist,** Molecular Biophysics and Integrative Bioimaging Division, LBNL.

## 09/15 – 06/20 Head, Biochemistry, Biophysics and Structural Biology Division, MCB Department, UC Berkeley.

01/12 – 06/15 Head**,** Biophysics Graduate Program, UC Berkeley

01/10 – 01/14 Deputy Director of the Bioenergy/GTL & Structural Biology Department, Life Science Division, LBNL

11/08 – 11/15 Senior Faculty Scientistat LBNL, Life Sciences Division, LBNL

## 07/06 – present **Professor** of Biochemistry, Biophysics and Structural Biology, Molecular and Cell Biology Department, UC Berkeley

07/03 – 06/06 Associate Professor of Biochemistry and Molecular Biology, Molecular and Cell Biology Department, UC Berkeley

09/00 – present **Investigator**, Howard Hughes Medical Institute 07/98 – 10/08 Faculty Scientist, Life Sciences Division, LBNL

07/98 – 06/03 Assistant Professor of Biochemistry and Molecular Biology, Molecular and Cell Biology Department, UC Berkeley

09/95 – 06/98 Staff Scientist, Life Sciences Division, LBNL

**AWARDS AND HONORS**

2021 Biophysical Society Annual Lecturer

2020 Vallee Visiting Professor

2020 Kuggie Vallee Distinguished Lecturer

2020 **Biophysical Society Fellow**

2019 Elected **EMBO Associate Member**

2019 Grimwade Medal by the University of Melbourne

2018 Sandra K. Masur Senior Leadership Award by the American Society for Cell Biology

2017 Elected **Fellow of the American Society for Cell Biology**

2016 LBNL Director’s Award for Exceptional Science Achievement

## 2016 Keith Porter Lecture Award by the American Society for Cell Biology

## 2016 Mildred Cohn Award in Biological Chemistry by the American Society for Biochemistry and Molecular Biology

## 2016 Elected **Member of the** **American Academy of Arts and Sciences**

## 2015 Elected **Member of the** **National Academy of Sciences**

2015 Dorothy Crowfoot Hodgkin Award by the Protein Society

2015 Distinguished Role Model in the Life Sciences, Northwestern University

2005 American Society for Cell Biology Early Career Award

2005 Chabot Science Award for Excellence

2000 Burton Award by the Microscopy Society of America 1998 Outstanding Performance Award, LBNL

1989 – 92 Doctoral fellowships, Spanish Ministry of Education and MRC (U.K.)

1984 – 88 Undergraduate fellowship by the Spanish Ministry of Education

**KEYNOTE PRESENTATIONS AND NAMED AND PLENARY LECTURES**

2021 James M. Akagi Lecture, University of Kansas

2021 Erlanger-Gasser Lecture, Washington University School of Medicine

2021 Plenary Lecture, Nebraska Drug Development Pipeline Symposium

2021 Kendall-Maddox Lectureship, Mayo Clinic

2021 David L. Weaver Lecture in Biophysics and Computational Biology, UC Davis

2021 Harry Steenbock Lectures, University of Wisconsin-Madison

2021 Martha L. Ludwig Lecture, University of Michigan

2020 Keynote, Buffalo Hamilton Toronto Symposium (BHT2020)

2020 Caspar Lecture, Florida State University (delayed)

2020 Schmidt Lecture, Tufts University School of Medicine

2020 Keynote, University of Virginia’s Molecular Physiology and Biological Physics Department Retreat

2020 Inaugural Brigid L.M. Hogan Keynote Lecture, Duke University

2019 Inaugural Donald G. Comb Honorary Lecture, New England Biolabs

2019 Keynote, Nature Conferences: Functional Dynamics - Visualizing Molecules in Action

2019 Blaffer Lecture, MD Anderson

2019 Solvay Conference, invited speaker and Public Seminar presenter

2019 Keynote speaker, Center for Cellular and Biomolecular Machines, UC Merced.

2019 Kensal E. van Holde Lecture, Marine Biology Laboratory

2019 Plenary Talk, European Biophysical Society Meeting

2019 Onasis Lectures, invited speaker

2019 Dean’s Lecture, Virginia Commonwealth University

2019 Keynote, Molecular Mechanistic Biology Symposium, Harvard Medical School

2019 Hadad Lecture, Haverford College

2019 Chipperfield Lecture, MIT

2018 Edward A. Doisy Lecture, Saint Louis University School of Medicine

2018 Hans Neurath Lecture, University of Washington

2018 Paul M. Horowitz Lecture, UT Health San Antonio

2018 Rosalind Franklin Lecture, Institute of Structural and Molecular Biology Symposium, UCL/Birbeck, London

2018 Keynote speaker, ASBMB Symposium “Transcriptional Regulation”

2018 Keynote speaker, Cytoskeletal Motors GRC

2018 Keynote speaker, FASEB Conference “Machines on Genes”

2018 Keynote speaker, 3D-EM GRC

2018 Keynote speaker, EMBL Symposium “Microtubules: from atoms to complex systems”

2018 Gruber Lecture, Yale University

2017 Russell Marker Lectures, University of Maryland

2017 Benning Lecture, University of Utah

2017 Plenary lecture, ESRF Cryo-EM Symposium

2017 Ernest C. Pollard Lecture in Biophysics at Penn State University

2017 Katherine D. McCormick Distinguished Lecture, Stanford University

## 2016 NCI Distinguished Scientist lecture

## 2016 James P. Holland Memorial Lecture, Indiana University

## 2016 Harvey Lecture, New York

2015 Dr. Smith Freeman Endowed Lecture, Chicago Cytoskeleton Meeting

2014 – 2015 Visiting Scholar of the Fundación Jesús Serra (at CNIO, Madrid)

2014 Symposium speaker ASCB meeting, “Cell Structure across Scales”

2014 Lamport Lecture, Dept. of Biophysics and Physiology, University of Washington

2014 Dean’s Distinguished Lecture, University of Colorado Medical School

2013 Keynote speaker, GRC on “Proteins”

2013 NIH WALS Lecture

2012 Fitzgerald Lecture, Duke University

2011 Keynote speaker, GRC on “Motile and Contractile systems”

2011 Keynote speaker, IUCr Annual Meeting, Madrid

2009 Max Birnstiel Lecture at IMP, Vienna

2009 Distinguished Lecture at EMBL, Heidelberg

2007 – 2008 Biomedicine Chair, Foundation BBVA (at CNIO, Madrid)

2006 Annual Hamilton Memorial Lecture, Temple University

**PARTICIPATION IN SOCIETIES, ADVISORY BOARDS, JOURNALS, CONFERENCE ORGANIZATION AND REVIEW PANELS**

2022-2028 Member, Scientific Advisory Board of the Max Planck Institute for Biochemistry, Munich

2021 Member, CZI Visual Proteomics Steering Council

2021-2024 **Member**, Scientific Advisory Board of the Institute for Molecular Physiology, Vienna

2021 Vallee Scholars Selection Committee

2021 Reviewer for the Medical Research Council, UK

2021 Ad Hoc Reviewer for NHLBI, National Institutes of Health (NIH)

2021 **Past President**, American Society for Cell Biology (ASCB)

2020 Reviewer for the French National Research Agency

2020 Ad Hoc Reviewer for NINDS, NIH

2020 President, ASCB

2019 Reviewer for the Natural Sciences and Engineering Research Council of Canada

2019 Co-organizer and co-chair of the Symposium “Cryo-EM – from physics to biology: honoring the remarkable legacy of Ken Downing”, M&M Annual Meeting, Portland.

2019 Congressional Briefing on Cryo-EM as part of the Biophysics Week organized by the Biophysical Society

2019 President Elect, ASCB

2019 - present **Member**, External Advisory Committee, Pacific Northwestern Center for Cryo-EM

2019 - present **Chair**, National Advisory Committee for the Latin American Fellows Program, PEW Charitable Foundation

2019 President elect, ASCB

2018 - present **Member**, Advisory Board of CryoEM 101, University of Utah.

2018 - present **Member**, Life Sciences Institute Scientific Advisory Board, University of Michigan

2017 Reviewer for the Villum Fonden, Denmark

## 2016 – present **Member**, International Academic Advisory Committee for the Beijing Innovation Center for Structural Biology at Tsinghua University.

## 2016 – present **Member**, External Advisory Board for the NSF-CREST Center for Cellular and Biomolecular Machines at UC Merced.

## 2016 Ad hoc scientific advisor for the Beckmann Foundation

## 2016 – present **Member**, External Advisory Board for CUNY ASRC-SBI

2015 NIH special study section panel member

## 2015 – present **Member,** Advisory Council for Princeton’s Molecular Biology Department

## 2015 – 2019 Member, Krios Oversight Committee, OHSU

## 2015 – present **Member,** Editorial Board of Journal of Cell Biology

## 2015 Elected Chair, GRC on “3-D Electron Microscopy”

## 01/14 – 09/15 Memberof the Scientific Advisory Committee for the Life Sciences Division, LBNL

2015 – 2018 Associate Editorof Journal of Structural Biology

2013 CMP study section, ad hoc member

2013 NCSD study section, ad hoc member

2012 Co-chair "New Technologies in Imaging", ASCB Annual meeting

2012 – 2018 Member of the Editorial Board of Journal of Molecular Biology

2012 MSFC study section, ad hoc member

2011 – 2018 Member of the National Advisory Committee for the Latin American Fellows Program, PEW Charitable Foundation

2010 Co-organizer, Structural Biology Workshop at Janelia Farm

2009 Member of the Search Committee for the LBNL Director

2009 Chair of the Early Career Selection Committee of the ASCB

2008 Co-organizer of Workshop “Frontiers in Cryo-EM” at Janelia Farm.

2008 Co-organizer of CNIO Cancer Conference “Structure and mechanism of essential complexes for cell survival”.

2007 Co-organizer of the “Imaging Techniques” workshop of the GTL-DOE Annual Conference

2007 Co-editor, Macromolecular Section, Current Opinion in Structural Biology

2006 Co-organizer, “Imaging” Mini-symposium ASCB Meeting

2005-2009 Macromolecular Structure and Function C Study Section Member

2004 Co-organizer of HHMI-MPI Workshop on Molecular and Cellular Imaging

2003 Organizer, QB3 Symposium: “Challenges in Biological Imaging: from cells to molecules”. Berkeley

2003 – 2005 Elected member of the Biophysical Society Executive Board

2002 – present **Chair,** Advisory Board for the National Resource for Automated Molecular Microscopy

2002 Co-organizer of the Biophysical Discussion “Frontiers in structural cell biology”, Biophysical Society

2000 – 2015 Member of the editorial board of Journal of Structural Biology.

1999 Editor of special issue of Journal of Structural Biology on Electron Crystallography

1999 Chair of symposium “Visualizing Function: a new revolution in electron microscopy”, Meeting of the American Society for Cell Biology (ASCB).

1999 Chair, session “New Challenges in Data Analysis and Interpretation”, GRC on 3D Electron Microscopy of Macromolecules

1998 Co-organizer of the workshop “Electron crystallography of biological macromolecules”, Granlibakken.

**RESEARCH STATEMENT**

## My lab is dedicated to the ***visualization of macromolecular function***, using cryo-EM as a main experimental tool. We study two different areas of essential eukaryotic biology: central dogma machinery in the control of gene expression, and cytoskeleton interaction and dynamics in cell division. The unifying principle in our work is the study of macromolecular assemblies as whole units of molecular function by direct visualization of their architecture, functional states, and regulatory interactions.

**PUBLICATIONS**

1. Herbst, D.A., Esbin, M.N., Louder, R.K., Dugast-Darzacq, C., Dailey, G.M., Fang, Q., Darzacq, X., Tjian, R., and Nogales, E. (2021) Structure of the human SAGA coactivator complex. NSMB, in press.
2. Pausch, P., Soczek, K.M., Herbst, D.A., Al-Shayeb, B., Banfield, J.F., Nogales, E. and Doudna, J.A. (2021) DNA interference states of the hypercompact CRISPR-CasΦ effector. NSMB **28**, 652-661.
3. Glaeser, R.M., Nogales, E. and Chiu, W. (2021) Single particle cryo-EM of biological macromolecules. Biophysical Society-IOP series. IOP Publishing. Online ISBN: 978-0-7503-3039-8. Print ISBN: 978-0-7503-3037-4
4. Patel, A., Toso, D., Litvak, A., and Nogales, E. (2021) Efficient graphene oxide coating improves cryo-EM sample preparation and data collection from tilted grids. bioRkiv 2021.03.08.434344. doi: https://doi.org/10.1101/2021.03.08.434344.
5. Nichols, R.J., LaFrance, B., Phillips, N.R., Oltrogge, L.M., Valentin-Alvarado, L.E., Bischoff, L.E., Nogales, E., and Savage, D.F. (2021) Discovery and characterization of a novel family of prokaryotic nanocompartments involved in sulfur metabolism. eLife 59288.
6. Herbst, D.A., Esbin, M.N., Louder, R.K., Dugast-Darzacq, C., Dailey, G.M., Fang, Q., Darzacq, X., Tjian, R., and Nogales, E. (2021) Structure of the human SAGA coactivator complex. BioRxiv 2021.02.08.430339; doi: https://doi.org/10.1101/2021.02.08.430339
7. Greber, B.J., Remis, J., Ali, S. Nogales, E. (2021) Structure of the CDK-activating kinase bound to the clinical inhibitor ICE0942 at 2.5 Å resolution. Biophys. J. **120**, 677-686 (journal cover).
8. Kasinath, V., Beck, C., Sauer, P., Poepsel, S.,Kosmatka, J., Faini, M., Toso, D., Aebersold, R., and Nogales, E. (2021) JARID2 and AEBP2 regulate PRC2 activity in the presence of H2A ubiquitination or other histone modifications. Science **371**, 6527.
9. Ferro, L.S., Eshun-Wilson, L., Gölcük,M., Fernandes, J., Huijben, T., Gerber, E., Fang, Q., LaFrance, B., Jack,A., Costa, K., Gür, M., Nogales, E. and Yildiz, A. (2020) Positive charge on the microtubule-binding domains of tau and MAP7 inhibits motor proteins. bioRxiv 2020.10.22.351346; doi: https://doi.org/10.1101/2020.10.22.351346
10. Martin, R., Tiancong Qi, T., Zhang, H., Liu, F., King, M., Toth, C., Nogales, E and Staskawicz, B.J. (2020) Structure of the activated Roq1 resistosome directly recognizing the pathogen effector XopQ. Science **370**, eabd 9993.
11. Castañeda, A.F., Didychuk, A.L., Louder, R.K., McCollum, C.O., Davis, Z.H., Nogales E. and Glaunnsinger, B.A. (2020) The gammaherpesviral TATA box binding protein interacts directly with the C-terminal domain of RNA polymerase II to direct late gene transcription. PLOS Pathogenes https://doi.org/10.1371/journal.ppat.1008843.
12. Greber, B.J., Perez Bertoldi, J.M., Lim, K., Iavarone, A.T., Toso, D.B. and Nogales, E. (2020) The cryo-electron microscopy structure of the human CDK activating kinase. PNAS **549**, 414-417.
13. Mena, E.L., Jevtić , P., Greber, B.J., Gee, C.L., Lew, B.G., Akopian, D., Nogales, E., Kuriyan, J., and Rape, M. (2020) Structural basis for dimerization quality control. Nature, ePub ahead of print.
14. García-Cerdán, Schmid, E.M., Takeuchi, T., McRae, I., McDonald, K.L., Yordduangjun, N., Hassan, A.M., Grob, P., Xu, C.S., Hess, H.F., Fletcher, D.A., Nogales, E., and Niyogi, K.K. (2020) Chloroplast Sec14-like 1 (CPSFL1) is essential for normal chloroplast development and affects carotenoid accumulation in *Chlamydomonas.* PNAS **117**, 12452–12463.
15. Kasinath, V., Beck, C., Sauer, P., Poepsel, S.,Kosmatka, J., Faini, M., Toso, D., Aebersold, R., and Nogales, E. (2020) JARID2 and AEBP2 regulate PRC2 activity in the presence of H2A ubiquitination or other histone modifications, BioRxiv https://doi.org/10.1101/2020.04.20.049213.
16. Greber, B.J. and Nogales, E. (2019) The structures of eukaryotic transcription pre-initiation complexes and their functional implications. Subcellular Biochemistry **93**, 143-192.
17. Patel, A.B., Moore, C.M., Greber, B.J., Luo, J., Zukin, S.A., Ranish, J. and Nogales, E. (2019) Architecture of the chromatin remodeler RSC and insights into its nucleosome engagement. Elife **54449**.
18. Patel, A.B., Greber B.J. and Nogales, E. (2019) Recent insights into the structure of TFIID, its assembly, and its binding to core promote. COSB **61**, 17-24.
19. Ghanim, G., Kellogg, E., Nogales, E. and Rio, D.C. (2019) Structure of a P element transposase-DNA complex reveals unusual DNA structures and GTP-DNA contacts. NSMB **26**, 1013-1022.
20. Nogales E., and Greber, B.J. (2019) Structures of TFIIH and their functional implications. COSB **59**, 188-194.
21. Carragher, B., Cheng, Y., Frost, A, Glaeser, G.M., Lander, G.C., Nogales, E. and Wang, H-W. (2019) Compendium of current outcomes when optimizing sample preparation of single-particle cryo-EM. J. Micros. **276**, 39-45.
22. Haloupek, N., Grob, P., Tenthorey, J., Vance, R. and Nogales, E. (2019) Cryo-EM Studies of NAIP–NLRC4 Inflammasomes. Methods in Enzymology Volume **625**: DNA Sensors and Inflammasomes, Ch. 12, 177, 204.
23. Liu, T., Liu, J.-J., Aditham, A., Nogales, E. and Doudna, J. (2019) Target preference of Type III-A CRISPR-Cas complexes at the transcription bubble. Nat. Commun.**10**, 3001.
24. Nguyen, T.H.D., Collins, K.and Nogales, E. (2019) Telomerase structures and regulation: shedding light on the chromosome end. COSB **55**, 185-193.
25. Eshun-Wilson, L., Zhang, R., Portran, D., Nachury, M.V., Toso, D., Lohr, T., Vendruscolo, M., Bonomi, M., Fraser, J.S. andNogales, E. (2019) Effects of α-tubulin acetylation on microtubule structure and stability. PNAS **116**, 10366-10371.
26. Greber, B.J., Toso, D.B., Fang, J. and Nogales, E. (2019) The complete structure of the human TFIIH core complex. eLife **44771**.
27. Liu, J-J. Orlova, N., Oakes, B.L., Ma, E., Spinner, H.B., Baney, K.L.M., Chuck, J., Tan, D., Knott, G.J., Harrington, L.B., Al-Shayeb, B., Wagner, A., Brötzmann, J., Staahl, B.T., Talyor, K.L., Desmarais, J., Nogales, E., Doudna, J.A. (2019) CRISPR-CasX is an RNA-dominated enzyme active for human genome editing. Nature **566**, 218-223.
28. Jiang, F., Liu J.-J., Osuna, B.A., Xu, M., Berry, J.D., Rauch, J.B., Nogales, E., Bondy-Denomy, J, and Doudna, J.A. (2019) Temperature-responsive competitive inhibition of CRISPR-Cas. Mol. Cell **73**, 1-10.
29. Kasinath, V, Pöpsel, S and Nogales, E. (2019) Recent structural insights into PRC2 regulation and substrate binding. Biochem. **58**, 346-354.
30. Nogales, E. (2018) Tubulin and its isoforms. Reference Module in Biomedical Sciences. Elsevier. 28-Dec-2018 doi:10.1016/B978-0-12-801238-3.11142-0.
31. Patel, A. Louder, R.K., Greber, B.J., Grünberg, S., Luo, J., Fang, J., Liu, Y., Ranish, J., Hahn, S. and Nogales, E. (2018) Structure of human TFIID and mechanism of TBP loading onto promoter DNA. Science **362**, eaau8872.
32. Iwai, M., Grob, P., Iavarone, A.T., Nogales, E. and Niyogi, K.K. (2018) A unique supramolecular organization of photosystem I in the moss Physcomitrella patens. Nat. Plants **4**, 904-909.
33. Nogales, E. (2018) Who mentors whom? MBoC **29**, 2606-2607.
34. Nogales, E. (2018) Cryo-EM. Curr. Biol. **28**, R1127-1128.
35. Zhang, R, LaFrance, B. and Nogales E. (2018) Separating the effect of nucleotide and EB binding on microtubule structure. PNAS **115**, E6191-E6200.
36. Kellogg, E.H., Hejab, N.M.A., Poepsel, S., Downing, K.H., DiMaio, F. and Nogales , E. (2018) Near-atomic model of microtubule-bound tau. Science **360**, 1242-1246.
37. Nguyen, T.H.D., Tam, J., Wu, R.A., Greber, B.J., Toso, D., Nogales, E., Collins, K. (2018) Cryo-EM structure of substrate-bound human telomerase holoenzyme. Nature **557**, 190-195. News and Views in that issue.
38. Pöpsel, S., Kasinath, V. and Nogales E. (2018) Cryo-EM structure of PRC2 simultaneous engagement with two functionally distinct nucleosomes. NSMB **25**, 154-162
39. Nogales, E. (2018) Cytoskeleton in high resolution. Nature Rev. Mol. Cell Biol. **19**, 142.
40. Kasinath, V., Faini, M.,Reif, D., Feng, X.A., Stjepanovic, G., Poepsel, S., Aebersold, R. and Nogales, E. (2018) Structures of human PRC2 with its cofactors AEBP2 and JARID2. Science **359**, 940-944.
41. Howes, S.C., Geyer, E.A., LaFrance, B., Zhang, R., Kellogg, E.H., Westermann, S., Rice, L.M. and Nogales, E. (2018***)*** Structural and functional differences between porcine brain and budding yeast microtubules. Cell Cycle, **17**, 278-287.
42. Nogales, E. (2018) Profile of Joachim Frank, Richard Henderson, and Jacques Dubochet, 2017 Nobel Laureates in Chemistry. PNAS **115**, 441-444.
43. Cheng, Y., Glaeser, R.M. and Nogales, E. (2017) How did cryo-EM get so hot? Cell **171**, 1229-1231.
44. Zhang, R., Roostalu, J., Surrey, T. and Nogales, E. (2017) Structural Insight into TPX2-Stimulated Microtubule Assembly. eLife **e30959**.
45. Tenthorey, J.L., Haloupek, N., López- Blanco, J.R., Grob, P., Adamson, E., Hartenian, E, Lind, N.A., Chacón, P., Nogales, E and Vance, R.E. (2017) Structural basis of flagellin detection by NAIP5: a strategy to limit pathogen immune evasion. Science **358**, 888-893.
46. Greber, B.J., Nguyen, T.H.D., Fang, J., Afonine, P.V., Adams, P.D. and Nogales, E. (2017) The cryo-EM structure of human TFIIH. Nature **549**, 414-417.
47. Wright, A.V., Liu, J.-J., Knott, G.J., Doxzen, K.W., Nogales, E. and Doudna, J.A. (2017). Structures of the CRISPR genome integration complex. Science **357**, 1113-1118.
48. Shin, J., Jiang, F., Liu, J-J., Bray, N.L., Rauch, B.J., Baik, S.H., Nogales, E., Bondy- Denomy, J., Corn, J.E., and Doudna, J.A. Disabling Cas 9 by anti-CRISPR DNA mimic. Science Advances **3**, e1701620.
49. Howes, S.C., Geyer, E.A., LaFrance, B., Zhang, R., Kellogg, E.H., Westermann, S., Rice, L.M. and Nogales, E. (2017) Structural differences between yeast and mammalian microtubules revealed by cryo-EM. JCB **216**, 2669-2677.
50. Nogales, E, Patel, A. and Louder R.K. (2017) Towards a Mechanistic Understanding of Core Promoter Recognition from Cryo-EM Studies of Human TFIID. COSB **47**, 60-66.
51. Nogales, E. and Kellogg, E.H. (2017) Challenges and opportunities in the high-resolution cryo-EM visualization of microtubules and their binding partners. COSB **46**, 65-70.
52. Xu, C.S., Hayworth, K.J., Lu, Z., Grob, P., Hassan, A., Garcia Cerdan, J.G., Niyogi, K.K., Nogales, E., Weinberg, R.J. and Hess, H.F. (2017) Enhanced FIB-SEM systems for large-volume 3D imaging. eLife **6**, e25916.
53. Nogales E., Louder R.K. and He Y. (2017) Structural Insights into the Eukaryotic Transcription Initiation Machinery. Ann. Rev. Biophys **46**, 59-83.
54. Kellogg, E., Hejab, N.M.A., Howes, S., Northcote, P, Miller, J.H., Diaz, J.F., Downing, K.H. and Nogales, E. (2017). Insights into the distinct mechanisms of action of taxane and non-taxane microtubule stabilizers from cryo-EM studies. J. Mol. Biol. **429**, 633–646. Cover in that issue.
55. Nogales, E, Fang, J. and Louder R.K. (2017) Structural dynamics and DNA interaction of human TFIID. Transcription **8**, 56-60.
56. CS Huang, E Nogales, C Ciferri (2017) Molecular architecture of the polycomb repressive complex 2. Polycomb Group Proteins, Chapter 8, 165-189. Academic Press.
57. Booth, E.A, Sterling, S.M., Dovala, D., Nogales, E. and Thorner, J. (2016) Effects of Bni5 Binding on Septin Filament Organization. J.Mol. Biol. **428**, 4962-4980.
58. Nogales, E. (2016) Dear microtubule, I see you. Mol. Bol. Cell **27**, 3202-3204.
59. Hurley, J.H. and Nogales, E. (2016) Next-generation electron microscopy in autophagy research. Curr. Opin. Struct. Biol. **41**, 211-216.
60. Nogales E., Louder R.K., He Y. (2016) Cryo-EM in the study of challenging systems: the human transcription pre-initiation complex. Curr Opin Struct Biol. **40**, 120-127.
61. Hochstrasser M.L., Taylor D.W., Kornfeld J.E., Nogales E., Doudna J.A. (2016) DNA targeting by a minimal CRISPR RNA-guided Cascade. Mol Cell. 63,840-851.
62. Kellogg, E., Howes, S., Ti, S-C., Ramirez-Aportela, E., Kapoor, T., Chacon, P. and Nogales, E. (2016) Near-atomic resolution cryo-EM structure of PRC1 bound to the microtubule. PNAS 113, 9430-9439.
63. Bertin A, Nogales E. (2016) Preparing recombinant yeast septins and their analysis by electron microscopy. Methods Cell Biol. **136**, 21-34.
64. Finnigan, G., Sterling, S., Duvalyan, A., Liao, E., Sargsyan, A., Garcia, G., Nogales, E. and Thorner, J. (2016) Coordinate action of distinct sequence elements localizes checkpoint kinase Hsl1 to the septin collar at the bud neck in *Saccharomyces cerevisiae*, MBoC **27**, 2213-2233.
65. He, Y., Yan, C., Inouye, C., Tjian, R., Ivanov, I. and Nogales, E. (2016) Near-atomic resolution visualization of human transcription promoter opening. Nature **533**, 359-365. News and Views in that issue.
66. Borisy, G, Heald, R., Howard J., Janke, C Musacchio, A. and Nogales, E. (2016) Microtubules: 50 years on from the discovery of tubulin. Nat. Rev. Mol. Cell Biol. 17, 322-328.
67. Ti SC, Pamula MC, Howes SC, Duellberg C, Cade NI, Kleiner RE, Forth S, Surrey T, Nogales E, Kapoor TM. (2016) Mutations in Human Tubulin Proximal to the Kinesin-Binding Site Alter Dynamic Instability at Microtubule Plus- and Minus-Ends. Dev. Cell **37**, 72-84.
68. Garcia G 3rd, Finnigan, G.C., Heassley, L.R., Sterling SM, Aggarwal A, Pearson CG, Nogales E, McMurray MA, Thorner (2016). Assembly, molecular organization and membrane-binding properties of developmental-specific septins. J Cell Biol. **212**, 515-29.
69. Louder, R.K., He, Y. Lopez-Blanco, J.R. Fang, J., Chacon, P., and Nogales, E. (2016) Structure of promoter-bound TFIID and model of human pre-initiation complex assembly.Nature **531**, 604-609.
70. Jiang, F., Taylor, D.W., Chen, J.S., Kornfeld, J.E., Zhou, K., Thompson, A.W., Nogales, E. and Doudna, J.A. (2016) Structures of a CRISPR-Cas9 R-loop complex primed for DNA cleavage. Science **35**, 867-71.
71. Nogales, E. (2016) The development of cryo-EM into a main-stream structural biology technique. Nature Methods **13**, 24-27.
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