

Gang Dong

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EXPERTISE AND RESEARCH FIELDS

Structural biology, X-ray crystallography, NMR spectroscopy, electron microscopy, homology modeling, biophysics, protein biochemistry, molecular biology, parasitology, structure-based drug design, organelle biogenesis, kinases, molecular machine, ciliogenesis, centriole duplication, flagellar assembly, cytoskeletal proteins, membrane trafficking, etc.

RESEARCH EXPERIENCE

Medical University of Vienna, Austria	Associate Professor (with tenure)	2016 - present
Max F. Perutz Laboratories, Austria	Group Leader	2008 - present
Medical University of Vienna, Austria	Assistant Professor	2008 - 2015
Yale University, New Haven, CT, USA	Associate Research Scientist	2006 - 2008
Yale University, New Haven, CT, USA	Postdoctoral Fellow	2002 - 2006
University of Texas at Austin, TX, USA	PhD Student	1998 - 2002
Peking University, Beijing, China	Master Student	1995 - 1998

EDUCATION

Ph.D. Biochemistry & Molecular Biology, University of Texas at Austin, USA	2002
M.S. Biophysics, Peking University, Beijing, China	1998
B.A. Plant Pathology, China Agricultural University, Beijing, China	1993

HONORS AND AWARDS

Postdoctoral Fellowship, American Heart Association, USA	2004-06
Brown-Coxe Postdoctoral Fellowship, Yale University, CT, USA	2004
University Presidential Fellowship, University of Texas at Austin, TX, USA	1999
Most Persuasive Speaker Award, University of Texas at Austin, TX, USA	1998
Excellent Graduate Student (Guanghua) Award, Peking University, Beijing	1997
Elected Delegation Member to Japan, China Agricultural University, Beijing	1992
Outstanding Activity Organizer Award, China Agricultural University, Beijing	1991
First-class Undergraduate Scholarship, China Agricultural University, Beijing	1990-93

PUBLICATIONS

1. Pivovarova Y, Liu J, Lesigang J, Koldyka O, Rauschmeier R, Hu K, and Dong G (2018) "Structure of a novel dimeric SET domain methyltransferase that regulates cell motility" *J. Mol. Biol.* 430(21): 4209-4229.

2. Siddiqui FA, Cabrera M, Wang M, Brashear A, Kemirembe K, Wang Z, Miao J, Chookajorn T, Yang Z, Cao Y, Dong G, Rosenthal PJ, and Cui L (2018) "*Plasmodium falciparum* Falcipain-2a polymorphisms in Southeast Asia and their association with artemisinin resistance" **J. Infect. Dis.** 218(3): 434-442.
3. Zhou Q, Dong G, and Li Z (2018) "Flagellum inheritance in *Trypanosoma brucei* requires a kinetoplastid-specific protein phosphatase" **J. Biol. Chem.** 293(22): 8508-8520.
4. Liang X, Hart KJ, Dong G, Siddiqui FA, Sebastian A, Li X, Albert I, Miao J, Lindner SE, Cui L. (2018) "Puf3 participates in ribosomal biogenesis in malaria parasites" **J. Cell Sci.** doi: 10.1242/jcs.212597.
5. Albisetti A, Florimond C, Landrein N, Vidilaseris K, Eggenspieler M, Lesigang J, Dong G, Robinson DR, and Bonhivers M (2017) "Interplay between the Flagellar Pocket Collar and the Hook complex via a novel microtubule associated protein in *Trypanosoma brucei*" **PLoS Pathog.** 13(11): e1006710.
6. Hu H, Majneri P, Kurasawa Y, An T, Dong G, and Li Z (2017) "Functional analyses of the CIF1-CIF2 complex in *Trypanosoma brucei* identify structural motifs required for complex assembly and cytokinesis initiation" **J. Cell Sci.** 130(24): 4108-4119.
7. Yue P, Zhang Y, Zhu Y, Lessigang J, Dong G*, and Guo W* (2017) "Sec3 promotes the initial binary t-SNARE complex assembly and membrane fusion" **Nat. Commun.** 8: 14236. (*co-corresponding authors)
8. Lesigang J and Dong G (2016) "Analysis of the three-dimensional structures of exocyst components" **Methods Mol. Biol.** 1369: 191-204.
9. Florimond C, Sahin A, Byard EH, Vidilaseris K, Dong G, Albisetti A, Landrein N, Dacheux D, Bonhivers M and Robinson DR (2015) "BILBO1 is a scaffold protein of the flagellar pocket in the pathogen *Trypanosoma brucei*" **PLoS Pathog.** 11(3): e1004654.
10. Dong G (2015) "Building a nine-fold symmetrical barrel: structural dissections of centriole assembly" (Review) **Open Biol.** DOI: 10.1098/rsob.150082.
11. Vidilaseris K, Lesigang J, Morriswood B, and Dong G (2015) "Assembly mechanism of *Trypanosoma brucei* BILBO1 at the flagellar pocket collar" **Commun. Integr. Biol.** DOI:10.4161/19420889.2014.992739
12. Shimanovskaya E, Viscardi V, Lesigang J, Lettman MM, Qiao R, Svergun DI, Round A, Oegema K, and Dong G (2014) "Structure of the *C. elegans* ZYG-1 cryptic polo box suggests a conserved mechanism for centriolar docking of Plk4 kinases" **Structure** 22(8): 1090-104. [Featured article of the Journal]
13. Vidilaseris K, Shimanovskaya E, Esson HJ, Morriswood B, and Dong G (2014) "Assembly mechanism of *Trypanosoma brucei* BILBO1, a multidomain cytoskeletal protein" **J. Biol. Chem.** 289(34): 23870-81.
14. Vidilaseris K, Morriswood B, Kontaxis G, and Dong G (2014) "Structure of the TbBILBO1 N-terminal domain from *Trypanosoma brucei* reveals an essential requirement for a conserved surface patch" **J. Biol. Chem.** 289(6): 3724-35.
15. Sealey-Cardona M, Schmidt K, Demmel L, Hirschmugl T, Gesell T, Dong G, and Warren G (2014) "Sec16 determines the size and functioning of the Golgi in the protist parasite *Trypanosoma brucei*" **Traffic** PMID: 24612401
16. Shimanovskaya E and Dong G (2014) "Expression, purification and preliminary crystallographic analysis of the cryptic polo-box domain of *Caenorhabditis elegans* ZYG-1" **Acta Crystallogr.** F70: 1346-50.
17. Vidilaseris K and Dong G (2014) "Expression, purification and preliminary crystallographic analysis of the N-terminal domain of *Trypanosoma brucei* BILBO1" **Acta Crystallogr.** F70: 628-631.

18. Shimanovskaya E, Qiao R, Lesigang J, and Dong G (2013) "The SAS-5 N-terminal domain is a tetramer, with implications for centriole assembly in *C. elegans*" *Worm* Volume 2, Issue 3, eLocation ID: e25214. PMID: 24778935.
19. Qiao R, Cabral G, Lettman MM, Dammermann A, and Dong G (2012) "SAS-6 coiled coil structure and interaction with SAS-5 suggest a regulatory mechanism in *C. elegans* centriole assembly" *EMBO J.* 31: 4334-4347.
20. Esson HJ, Morriswood B, Yavuz S, Vidilaseris K, Dong G, and Warren G (2012) "Morphology of the trypanosome bilobe, a novel cytoskeletal structure" *Eukaryot. Cell* 11: 761-772.
21. Hung KW, Chang YW, Eng ET, Chen JH, Chen YC, Sun YJ, Hsiao CD, Dong G, Spasov KA, Unger VM, and Huang TH (2010) "Structural fold, conservation and Fe(II) binding of the intracellular domain of prokaryote FeoB" *J. Struct. Biol.* 170: 501-512.
22. Dong G, Wearsch PA, Peaper DR, Cresswell P, and Reinisch KM (2009) "Insights into MHC class I peptide loading from the structure of the tapasin/ERp57 heterodimer" *Immunity*, 30: 21-32. [Featured article, F1000 selection]
23. Dong G, Medkova M, Novick P, and Reinisch KM (2007) "A catalytic coiled-coil: structural insights into the activation of the Rab GTPase Sec4p by Sec2p" *Mol. Cell*, 25, 455-462.
24. Novick P, Medkova M, Dong G, Hutagalung A, Reinisch KM, and Grosshans B (2006) "Interactions between Rabs, tethers, SNAREs and their regulators in exocytosis" *Biochem. Soc. Trans.* 34: 683-686.
25. Menon S, Cai H, Lu H, Dong G, Cai Y, Reinisch KM, and Ferro-Novick S (2006) "mBET3 is required for the organization of the TRAPP complexes" *Biochem. Biophys. Res. Commun.* 350: 669-677.
26. Dong G, Hutagalung AH, Fu C, Novick PJ, and Reinisch KM (2005) "Structures of Exo70p and the Exo84p C-terminal domains reveal a common motif" *Nat. Struct. Mol. Biol.* 12: 1094-1100.
27. Dong G, Chakshusmathi G, Wolin SL, and Reinisch KM (2004) "Structure of the La motif: a winged helix domain mediates RNA binding via a conserved aromatic patch" *EMBO J.* 23: 1000-1007.
28. Dong G, Noakowski J, and Hoffman DW (2002) "Structure of small protein B: the protein component of the tmRNA-SmpB system for ribosome rescue" *EMBO J.* 21: 1845-1854.
29. Zhou ZH, Baker ML, Jiang W, Dougherty M, Jakana J, Dong G, Lu GY, and Chiu W (2001) "Electron cryomicroscopy and bioinformatics suggest protein fold models for rice dwarf virus" *Nat. Struct. Mol. Biol.* 8: 868-873.
30. Liu S, Dong G, Wei X, and Lu GY (1998) "Crystallization of graylag goose (*Anser anser*) oxy-hemoglobin and preliminary X-ray crystallographic study" *Acta. Biophys. Sinica*, 14: 41-43.

EXTERNAL FUNDING

1. NIH-R01: National Institutes of Health (United States) Research Project Grant "Mechanism of infectivity acquisition in African Trypanosomes". Sum: **\$2,311,805.00**. Supporting period 2019-2024. Role: Sub-award PI (Main proposer: Prof. Christian Tschudi - Yale University).
2. W-1258 Doktoratskollegs (DKs): FWF International PhD Program "Integrative Structural Biology". Sum: **€2,000,000.00** (shared by 7 groups). Supporting period 2016-2019. Role: Co-PI
3. P28231-B28: FWF (Austrian Science Fund) Stand-alone Project "Structural Characterization of ZYG-1 in Centriole Assembly". Sum: **€450,513.00**. Supporting period 2015-2019. Role: PI

4. P24383-B21: FWF Stand-alone Project “Structural studies of the *Trypanosoma brucei* protein TbBILBO1”. Sum: **€335,550.00**. Supporting period 2012-2016. Role: PI
5. P23440-B20: FWF Stand-alone Project “Structural Studies of the Intraflagellar Transport Complexes”. Sum: **€379,570.00**. Supporting period 2011-2015. Role: PI
6. WWTF (Vienna Science and Technology Fund) Life Sciences – Molecular Mechanisms and Methods Call 2009 “Towards sustainable food and bioenergy security for society: Establishing an academic compound screening platform in Vienna to characterize and modulate Strigolactone synthesis in plants”. Sum: **€640,000.00**. Supporting period 2010-2013. Role: Research Partner
7. American Heart Association (AHA) – Long-term Postdoctoral Fellowship, 2004-2006. Sum: **\$130,000** (salary plus health insurance and benefits). Role: PI
8. Brown-Coxe Postdoctoral Fellowship, 2004. Sum: **\$65,000** (salary plus health insurance and benefits). Role: PI

TEACHING AND SUPERVISING ACTIVITIES

1. 2016-2019: Lectured “Protein-DNA Interactions” in the graduate course “Methods in Molecular Biology and Biochemistry” (Medical University of Vienna, Austria)
2. 2015-2019: Lectured “Introduction to X-ray crystallography, SLS and SAXS” in the graduate course “Advanced Biochemical and Biophysical Methods” (University of Vienna, Austria)
3. 2010-2019: Lectured “Introduction to Structural Biology” in the graduate course “Advanced Methods in Cell Biology” (Medical University of Vienna, Austria)
4. 2009-2019: Hosted and supervised 20 visiting students and scholars
5. 2008-2019: Supervised 6 PhD students, 3 Post-docs, 2 technicians and 2 diploma students
6. 2016: Lectured “Small angle X-ray scattering” in the Integrative Structural Biology PhD Program (University of Vienna and Medical University of Vienna, Austria)
7. 2016: Lectured “Current Topics at VBC” in the Vienna Bio-center (VBC) graduate course series (Vienna Bio-center, Austria)
8. 2015: Lectured in the graduate course “Biochemical and Biophysical Validation and Characterization Approaches” (University of Vienna, Austria)
9. 2015: Lectured in the graduate course “Biochemical and Biophysical Validation and Characterization Approaches” (University of Vienna, Austria)
10. 2014: Taught the experimental course “Protein Biochemistry” (University of Vienna, Austria)
11. 2012: Organized and taught lectures in “Structure and Function of Biological Macromolecules” (Vienna BioCenter PhD Program Lecture Series, Vienna, Austria)
12. 2006-2007: Coordinated discussions in the graduate course “Biochemical & Biophysical Approaches in Molecular & Cellular Biology” (Yale University, New Haven, CT, USA)
13. 2001-2002: Lectured the graduate course “*Biochemistry Laboratory Techniques*” (University of Texas at Austin, USA)
14. 2000-2001: Taught the undergraduate practical course “*Techniques in Molecular Biology*” (University of Texas at Austin, USA)

15. 1999-2000: Assisted in teaching the undergraduate course “*Evolution and Ecology*” (University of Texas at Austin, USA)
16. 1996-1997: Taught undergraduate laboratories of “*Molecular & Biochemical Techniques*” (Peking University, Beijing, China)

INVITED TALKS (last six years)

1. *Vienna BioCenter Recess, Vienna, Austria.* Feb 22-23, 2019.
2. *Faculty Annual Retreat, Max F. Perutz Laboratories, Vienna, Austria.* Nov 23-24, 2018.
3. *Physics of Parasitism Meeting, Wurzburg, Germany.* Sept 24, 2018.
4. *Department of Biological Sciences, National University of Singapore.* May 18, 2018.
5. *University of Texas Health Science Center at Houston, USA.* Apr 3, 2018.
6. *Department of Biophysical Chemistry, University of Vienna, Austria.* Nov 17, 2017.
7. *Department of Cell and Developmental Biology, University of Wurzburg, Wurzburg, Germany.* Nov 16, 2017.
8. *Institute of Pharmacology, Center of Physiology and Pharmacology, Medical University of Vienna, Austria.* Nov 3, 2017.
9. *University of Science & Technology of China, Hefei, China.* Sept 14, 2017.
10. *High Magnetic Field Laboratory, Chinese Academy of Sciences, Hefei, China.* Sept 14, 2017.
11. *Drexel University, Philadelphia, PA, USA.* April 28, 2017.
12. *Pennsylvania State University, University Park, PA, USA.* April 27, 2017.
13. *7th Kinetoplastid Molecular Cell Biology meeting, Woods Hole, MA, USA.* April 22-26, 2017.
14. *Memorial Sloan Kettering Cancer Center, New York, USA.* Sept 16, 2016.
15. *Texas A&M University, College Station, Texas, USA.* Sept 8, 2016.
16. *Capital Medical University, Beijing, China.* July 11, 2016.
17. *University of Osnabrück, Osnabrück, Germany.* May 19, 2015.
18. *CNRS, University of Bordeaux. Bordeaux, France.* Oct 29, 2014.
19. *EMBO Conference - Centrosomes and Spindle Pole Bodies.* Lisbon, Portugal. Sept 30 - Oct 3, 2014.
20. *6th ÖGMBT (Austrian Biophysics Society) Annual Meeting.* Vienna, Austria. Sept 14-16, 2014.
21. *Crossing Frontiers in Life Sciences.* University of Vienna, Austria. Sept 11-12, 2014.
22. *Iowa State University.* Ames, IA, USA. June 17, 2014.
23. *Yale University, School of Medicine.* New Haven, CT, USA. June 13, 2014.
24. *Gordon Research Conference - Biology of Host-Parasite Interactions.* Newport, RI, USA. June 8-13, 2014.
25. *2013 Cilia, Flagella and Centrosome Meeting.* Carry-le-Rouet, France. Oct 7-9, 2013.
26. *The University of Hong Kong.* Hong Kong, China. June 8, 2013.
27. *2012 Cilia, Flagella & Centrosome Meeting.* Carry-le-Rouet, France. Oct 22-24, 2012.

28. *3rd International Conference on Cellular Dynamics and Chemical Biology*. Hefei, China. Nov 16-18, 2012.
29. *4th ÖGMBT (Austrian Biophysics Society) Annual Meeting*. Salzburg, Austria. Sept 17-19, 2012.
30. *American Crystallographic Association Annual Meeting*. Boston, USA. July 28 - Aug 1, 2012.
31. *Institute of Hydrobiology, Chinese Academy of Science*. Wuhan, China. May 12, 2012.
32. *Wuhan University*. Wuhan, China. May 11, 2012.

COURSES AND CERTIFICATES

1. Participant of the workshop “**Approaches to Mentoring and Publication Strategy for Research Group Leaders**” (2016) Vienna Bio-center, Austria
2. Certificate in “**Science - Bridging the Gap**” (2015) Medical University of Vienna
3. Certificate in “**Applying for Academic Jobs in Medicine and Sciences**” (2015) Medical University of Vienna, Austria
4. Participant of the two-week course series “**How to Prepare and Write an Effective Scientific Report**” (2007) Yale University, CT, USA

AWARDS RECEIVED BY SUPERVISED STUDENTS/POSTDOCS

1. **Dr. Niran Aeksiri**, Postdoc from Thailand. ASEA-UNINET Exchange Scholarship. Funding agent: Austrian Agency for International Cooperation in Education & Research (OeAD-GmbH), Centre for International Cooperation & Mobility (ICM). Sum: €11,080.00. Jan - Sept 2019.
2. **Emma Stepinac**, PhD student. Silver Medal of the “2018 Perutz Awards”. Dec 2018, Vienna, Austria
3. **Emma Stepinac**, PhD student. Best Poster Prize at the Vienna Doctor School Annual Retreat. 2018, Vienna, Austria
4. **Dr. Yan Zhang**, Lecturer at the Xinjiang Medical University, China. EURASIA PACIFIC UNINET Exchange Scholarship. Funding agent: Austrian Exchange Service (OeAD-GmbH), Centre for International Cooperation & Mobility (ICM). Sum: €10,000.00. July - Dec 2016.
5. **Johannes Lesigang**, Research Assistant. Bronze Medal of the “2014 Perutz Crystal Awards”. Aug 2014, Vienna, Austria
6. **Ekaterina Shimanovskaya**, PhD student. Best Poster Prize at the EMBO/EMBL Symposium “Molecular Machines: Lessons from Integrating Structure, Biophysics and Chemistry”. 18-21 May 2014, Heidelberg, Germany
7. **Keni Vidilaseris**, PhD student. Best Poster Prize at the MFPL Annual Meeting. 2013, Vienna, Austria
8. **Keni Vidilaseris**, PhD student. Best Oral Presentation Prize at the CFC2013 annual conference, 2013, Marseilles, France.
9. **Keni Vidilaseris**, PhD student. ASEA-UNINET Graduate Scholarship. Funding agent: Austrian Federal Ministry of Education, Science and Culture. Sum: €60,000.00. 2010-2013.
10. **Dr. Shentao Li**, Associate Professor at the Capital Medical University, China. EURASIA PACIFIC UNINET Exchange Scholarship. Funding agent: Austrian Exchange Service

(OeAD-GmbH), Centre for International Cooperation & Mobility (ICM). Sum: €5,000.00. April - June 2013.

11. **Renping Qiao**, PhD student. Travel Grant & Invited Speaker at the American Crystallographic Association Annual Meeting. 2012, Boston, USA
12. **Renping Qiao**, PhD student. Practical Training Grant for the Protein Production Platform (P-CUBE). 2009, Grenoble, France.

EXTRACURRICULAR ACTIVITIES

1. Coordinator and Main Proposer, Block Allocation Group Proposal (BAG-20180001 EC, total 9 Austrian crystallography groups) at the German Electron Synchrotron (DESY) Photon Science Facility (2018 – 2021).
2. Invited Guest Editor, Special Issue “Cilia and Flagella: Structure, Function and Beyond” published in *Cells* (2018 – 2019);
3. Coordinator and Main Proposer, Austrian Block Allocation Group (BAG) Proposal (total 12 Austrian crystallography groups) at the European Synchrotron Radiation Facility (2016 – 2020).
4. Member of the Vienna Bio-center (VBC) Best PhD Thesis Evaluation Panel (2016).
5. Steering Committee Member of the “Integrative Structural Biology” PhD program founded by the Austrian Science Fund (2016 – present).
6. Invited Guest Editor for the special issue “Cilia and Flagella: Biogenesis and Function” published in *Cells* (2015 – 2016).
7. Editorial or Review board member of (1) *Cells*, (2) *Frontiers in Cell Growth and Division*, (3) *Journal of Syndromes*, (4) *Journal of Molecular Biology and Molecular Imaging*, and (5) *Aperito Journal of Bacteriology, Virology & Parasitology* (2011 – present).
8. Membership of the Austrian Biophysical Society (2010 – present).
9. Invited reviewer for scientific journals including *eLife*, *Nature Structure & Molecular Biology*, *Nature Cell Biology*, *Nature Chemical Biology*, *EMBO Journal*, *Journal of Cell Biology*, *Structure*, etc. (2010 – present)
10. Invited and hosted 20 national/international speakers at the Vienna BioCenter (2009 – present).
11. Reviewer for international grant applications (2008 – present).
12. Membership of the American Society for Cell Biology (2004 – 2010).
13. Membership of the RNA Society (2001 – 2006).