Alexey Jarrell Merz · *vita* *v. 2020.07.10*

1. **Personal**

Origin U.S. Citizen, born in San Francisco.

Work Department of Biochemistry, HSB J-Wing, Rm. 357, UW Box 357350,
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2. **Education**

2000 Ph.D., Molecular Microbiology and Immunology, Oregon Health & Science University.
Dissertation research with Prof. Magdalene Yh So.

1992 B.A., Biology, Reed College, Oregon.

3. **Postdoctoral training & other experience**

2000–'04 Postdoctoral Fellow with Prof. William Wickner,
Department of Biochemistry, Geisel School of Medicine at Dartmouth.

1999 Visiting Scholar with Prof. Michael Sheetz,
Department of Cell Biology, Duke University School of Medicine.

1992–'94 Senior Technician, Oregon Health & Science University.

–1992 Test Engineer for data science applications, Red Brick Systems (now a unit of IBM; supervisor, Dr. Ralph Kimball) · Bike messenger · Freelance photographer · Explainer (Exploratorium).

4. **Faculty positions**

2019– Professor of Biochemistry, University of Washington.

Professor of Physiology & Biophysics (by courtesy), University of Washington.

2012– Associate Professor of Physiology & Biophysics (by courtesy), University of Washington.

2010– Associate Professor of Biochemistry with tenure, University of Washington.

2011– Faculty, UW Biological Physics, Structure & Design (BPSD) Graduate Program.

2004– Faculty, UW Center for Nanotechnology.

2004– Faculty, UW Molecular and Cellular Biology (MCB) Graduate Program.

2004–'10 Assistant Professor of Biochemistry, University of Washington.

5. Hospital positions *(not applicable)*

6. **Honors & awards**

2017	WWAMI Pro – Student-initiated recognition for excellence in medical education.
2010–'13	American Cancer Society Research Scholar.
2003–'04	NIH Postdoctoral Fellow T32 AR07576.
2000–'03	Damon Runyon Cancer Research Foundation Postdoctoral Fellow.
2001	Paper of the Year, OHSU Graduate Council.
1997	Sears Award for Excellence in Graduate Medical Education.
1996–'97	N.L. Tartar Research Award, OHS Foundation.
1996–'99	NIH Predoctoral Fellow T32 AI0747.
1992	HHMI Undergraduate Research Fellow.

7,8. Board certifications/Licenses to practice *(not applicable)*

9. **Professional organizations**

American Association for the Advancement of Science · American Society of Cell Biologists · American Society for Biochemistry and Molecular Biology · National Center for Science Education

10a. **Teaching**

2019 UW BPSD542 — ***Literature Review.*** Course Director.

2016–'18 UW MEDSCI510 — ***Molecular and Cellular Basis of Disease*** (*c.* 100 first-year UW medical students, plus students at WWAMI sites). *Instructor of Record*. *Co-Director*, with Drs. M. Horowitz and B. Wisse. Versions 2.0 and 3.0 curriculum re-design. Supervised and attended 80-90 classroom hours. Led 15-20 in-class hours. Co-wrote formative and summative assessments. Co-supervised entire course at UW-Seattle. Coordinated with WWAMI consortium to integrate MCBD with material in subsequent courses (40-50 hours of meetings per year).

2015 UW MEDSCI510 — ***Molecular and Cellular Basis of Disease*** (*c.* 100 first-year UW medical students plus students at WWAMI sites). *Instructor of Record*. *Co-Director*, with Drs. M. Horowitz and B. Wisse. Ground-up active-learning curriculum redesign and launch. Our course was synchronously launched across five WWAMI sites in five states and entails c. 112 classroom hours (16h/wk). Supervised and attended ~100 classroom hours (16h/wk). Lead 17 in-class hours. Co-wrote formative and summative assessments. Co-supervised entire course at UW-Seattle. Coordinated with WWAMI consortium to integrate MCBD with material in subsequent courses.

2015 UW BIOC441 — ***Biochemistry*** (*c.* 290 undergraduate Biochemistry majors). Seven lectures, exams, and honors sections.

2012–'14 UW BIOC441 — ***Biochemistry*** (*c.* 290 undergraduate Biochemistry majors). Course Director. Fifteen lectures, exams, honors sections, and administration.

2010–'12 UW BIOC406 — ***Introduction to Biochemistry*** (*c.* 640 undergraduates in two sections — about one in ten UW undergraduates take this course). Course Director. Fifteen to twenty lectures, four exams, online tutoring, and almost all course administrative

overhead (>50% of the course).

2008–'09 UW BIOC406 — ***Introduction to Biochemistry*** (*c.* 550 undergraduates). With J. Hurley. Fifteen lectures plus weekly 90-minute problem review sessions (50% of the course).

2006–'16 UW BPSD/BIOC54x — ***Literature Review***. One or two sessions per year.

2006–'07 UW BIOC406 — ***Introduction to Biochemistry*** (*c.* 500 undergraduates). With J. Hurley and P. Petra. Ten lectures plus weekly 90-minute problem review sessions (33% of the course).

2005–'07 UW CONJ541 — ***Molecular Biology of Cellular Processes***. With P. Bornstein *et al*. Three lectures and exam.

1999–2000 OHSU MB611 — ***Principles of Microbial Pathogenesis***. Lecturer; six classroom hours.

1998 OHSU MB610 — ***Microbiology for Medical Students***. Laboratory TA.

10b. **Postdoctoral trainees**

2008–'15 Daniel P. Nickerson, Ph.D. (University of Colorado, Boulder)*. American Cancer Society Postdoctoral Fellow.*

- *Assistant Professor of Biology, CSU-San Bernardino.*

2013–'15 Elizabeth Manrao, B.S.S.E., Ph.D. (University of Washington). *NIH F32 Kirchstein Postdoctoral Fellowship (declined in favor of private-sector position).*

- *Data Scientist, Microsoft.*

2009–'15 Hannah Chapin, Ph.D. (Yale University School of Medicine)*. UW Basic Biology of Aging Postdoctoral Fellow. Declined two tenure-track Asst. Professorship offers.*

- *Life Science Instructor, Seattle Academy.*

2011–'13 Sheng-Ying (Margaret) Lo, Ph.D. (UW)*.*

- *Associate Director of Clinical Chemistry, Geisinger Laboratories.*

2005–'10 Christopher L. Brett, Ph.D.

- *Professor of Biology and Canada Research Chair, Concordia University, Montreal.*

10c. **Graduate trainees**

2017-'18 Caitlin Cornell, B.A. (Chemistry; co-advisor with Prof. S. Keller).

2017-'18 Chantal Leveille, Ph.D. (Chemistry; co-advisor with Prof. S. Keller).

2017–'18 Tomoka Takenaka, M.S. (Graduate exchange student, Tokyo Institute of Technology). *Silver Poster Prize, Seoul Symposium on Membrane Traffic, 2018.*

2014–'18 Glennis Rayermann, Ph.D. (Chemistry; co-advisor with Prof. S. Keller).

- *Fellow, art authentication, preservation, and restoration.*

2014–'17 Scott Rayermann, Ph.D. (Chemistry; co-advisor, with Prof. S. Keller).

- *Lecturer, Chemistry, UW–Tacoma.*

2007–'13 Andrew Paulsel, Ph.D. (Biochemistry).

2007–'12 Braden Lobingier, Ph.D. (Biochemistry)*. UW CMB Training Grant Predoctoral Fellowship.*

NIH Ruth Kirschstein Fellow. K99 Pathway to Independence award.

- *Assistant Professor of Physiology & Pharmacology, Oregon Health & Science University.*

2006–'11 Sheng-Ying (Margaret) Lo, Ph.D. (Physical Chemistry). Co-mentor: Sarah Keller. 2007–'08 *UW IGERT Nanotechnology Fellowship.* 2008 *ASCB Travel Award*. 2009–'10 *UW IGERT Nanotechnology Fellowship.*

- *Associate Director, Clinical Chemistry & Preanalytics, Geisinger Medical Laboratories.*

2005–'10 Matthew Schwartz, Ph.D. (Biochemistry). *UW CMB Training Grant Predoctoral Fellowship. Schulz Travel Fellowship.*

- *Senior Fellow, HHMI/University of Utah.*

2005–'10 Cortney G. Chertova (Angers), Ph.D. (Biochemistry).

- *Senior Manager, Regulatory Strategic Writing, AbbVie, Inc.*

2009–'10 Erina Kitano, Ph.D., Kobe University Medical School (UW–Kobe Exchange Program).

- *Software developer.*

10d. **Rotation graduate students**

2019 Samantha Zepeda

2019 Stephen Rettie

2017 Rachel Flores

2017 Anika Burrell

2015 Abraham Guitirrez

2013 Jerome Cattin

2013 Brantley Coleman

2013 George Ueda

2011 Amy Lassen

2010 Emily Fawcett

2010 Matthew Iadanza

2008 Breanna Vollmar

2005 Robert Vernon

10e. **Undergraduate trainees** (partial list)

2019 Ariel Lin, B.S., CSU-San Bernardino.

2019 Beatiz Delgado, CSU-San Bernardino (NIH MARC awardee).

2018– Malia Clark

2017–'18 Fariah Qasim, B.S.

2016–'19 Weisha Liu, B.S.B.E. (UW Bioengineering Capstone student)

2015–'17 Mengtong Duan, B.S. (Mary Gates Travel Award; Earl Davie Book Award; ASCB poster

presenter; Departmental Honors; College Honors; Magna cum laude).
Graduate student, Caltech.

2015–'16 Sarah Mirahsani, B.S.; *Medical student, UW–SoM, e17*.

2009 Emily Fawcett, B.S., Ph.D. (St. Mary's College; Amgen Summer Scholar).

2008 Ankita Mishra, B.S. (Caltech; Amgen Summer Scholar).

2007–'08 Julee Ashmead, B.S.

2007–'10 Carter Yeh, B.S.

2007–'08 Howard Chang, B.S.

2007–'08 Ellen Lesh, B.S.

2006–'07 Mary Nader Morcos, B.S., M.D.

2005–'06 Jacob Tedrow, B.S., (Biochemistry).

2005–'06 Debra Sprague, B.S. (Biology), Ph.D. (English), HHMI Undergraduate Fellow. *Currently employed as a biomedical writer in Seattle.*

10f. **Laboratory professional staff**

2005– Rachael Plemel, B.S., Research Scientist II.

2017–19 Mengtong (Tom) Duan, B.S., Research Scientist I.
Fall, 2019: Graduate program in Biology & Biological Engineering, Caltech.

10g. **Visiting scholars/sabbaticals**

Ken Nickerson, Professor, University of Nebraska School of Medicine

10h. **Dissertation committees**

I have served on 55+ graduate student advisory committees at UW. ~15 are active.

11. **Editorial service**

*Since 2/2014 I have disclosed my identity on **all** manuscript reviews.*

Referee: *Science · Nature · Biophys. J. · Curr. Biol. · Dev. Cell · eLIFE · Euk. Cell · F1000 Biol · Genetics · J. Bact · JBC · JCB · JCS · JGP · J. Neurosci. · MBoC · Mol Microbiol. · Nanotechnology · NCB · NSMB · Nat. Rev. MCB · Nat. Protocols · PLoS Genetics · PLoS Pathogens · PNAS · Traffic · etc.*

12. **National & international service**

2018 Grant review (*ad hoc*), Wellcome DBT India Alliance.

2018 Tenure review (*ad hoc*), Reed College.

2017 Tenure review (*ad hoc*), NIH (NHLBI).

2014 Grant review (*ad hoc*), MRC (Medical Research Council), UK.

2011–'14 ASBMB Membership Committee.

2013 Co-Chair, Symposium on Protein and Organelle Quality Control. *2013 American Society for Cell Biology Annual Meeting.*

2011 Co-Chair, Mini-Symposium on Membrane Fission and Fusion. *2011 American Society for Cell Biology Annual Meeting.*

2011 Tenure review (*ad hoc*), University of Louisville.

2011, '15 NIH grant review, *ad hoc*.

2007 ASBMB Membership Committee, *ad hoc*.

13. **Local service**

Current

2020-'23 UW School of Medicine Council on Appointments & Promotions.

2020–'21 UW Chemical and Physical Hazards in Research Safety Committee (CPHRSC).

2014– Co-Director, Molecular and Cellular Basis of Disease course, UW School of Medicine.

2013– UW Biochemistry Faculty Mentoring Committee for Dr. S. Hoppins.

2011– UW Biochemistry Faculty Mentoring Committee for Dr. M. Ailion.

Past

2018–'20 Co-Chair, UW Biochemistry Seminar Committee.

2019 UW Provost's Task Force on Laboratory Safety.

2017 UW Biochemistry Teaching Assignment Committee.

2012–'17 UW Biochemistry Seminar Committee (Chair).

2010–'17 Working Committee, Sackler Scholars in Integrative Biophysics. (*Resigned.*)

2016–'17 UW Institute for Protein Design Faculty Search Committee.

2015–'16 UW Institute for Protein Design Faculty Search Committee.

2013–'16 UW Faculty Senate.

2014–'15 UW Institute for Protein Design Faculty Search Committee.

2013–'14 UW Institute for Protein Design Faculty Search Committee.

2012–'14 Admissions Committee, UW Biophysics, Structure & Design Graduate Program.

2012–'14 UW Biochemistry Departmental Retreat Organizing Committee

2012–'14 UW Faculty Senate.

2012–'13 UW Search Committee for Biochemistry Department Chair.

2011–'13 Hans Neurath Lecture Organizing Committee.

2011–'12 UW Biochemistry Graduate Admissions Committee (Chair).

2010–'11 UW Biochemistry Faculty Search Committee.

2010–'12 UW Biochemistry Dept. Website Committee (Chair)

2009–'10 UW Biochemistry Faculty Search Committee.

2008–'09 UW Biochemistry Faculty Search Committee.

2009–'11 UW Biochemistry Undergraduate Teaching Committee (Chair).

2008–'09 UW Biochemistry Faculty Search Committee.

2007–'09 UW Biochemistry Seminar Committee.

2007–'08 UW Biochemistry Faculty Search Committee.

2005–'09 UW CMB Training Grant (T32 GM007270) Selection Committee.

2005–'07 UW Biochemistry Graduate Admissions Committee.

2006–'08 UW Royalty Research Fund, referee.

2006 UW Mary Gates Undergraduate Research Scholarships, referee.

14a. **Current research support**

2020-'22 Pending: *Molecular basis of pilus-mediated gonococcal adhesion.*

NIH R21 AI155991. PI: Merz

$420,000 direct + indirect over 2 years.

NIAID payline for R21 mechanism: priority ≤31. Score on this proposal: 28.

2019-'23 *Mechanisms of AP-3 function in vesicle formation and Golgi maturation.*

NIH R01 GM130644. PI: Merz; collaboration w/ Co-PI G. Odorizzi (CU-Boulder).
Approx $2M direct+indirect over 4 years.

The goal of this project is to identify molecular mechanisms by which the AP-3 protein complex drives vesicle formation and regulates Golgi structure and function.

2006–'21 *Dynamics of endomembrane docking and fusion*. NIH R01 GM077349. PI: Merz
$1.44M direct + indirect for current (4-year) award.
The goal of this project is to elucidate fundamental mechanisms of membrane fusion by developing and exploiting new genetic and biochemical methods.

2019 *Quasielastic light scattering instrument.* NIH R01 GM077349-S1. PI: Merz

$99,000 direct.

Administrative supplement to GM077349 (Merz) for a quasielastic light scattering spectrometer. Approved for funding 5/29/2019.

2018 *High sensitivity light microscope*. NIH R01 GM077349-S1. PI: Merz

$319,500 direct ($191,500 + $128,000 to Co-PI Hoppins).

Administrative supplement to GM077349 (Merz) and GM118509 (Hoppins) for an advanced optical microscope.

14c. **Completed research support**

2017 *NIH Small Instrumentation Grant: DeltaVision OMX-SR 3D-SIM microscope* PI: Wordeman.

2014 *NIH Small Instrumentation Grant: Leica SP8 confocal microscope* PI: Catterall.

2010–'13 *Molecular basis of endolysosomal traffic control.* American Cancer Society Research Scholar grant. RSG-10-026-01-CSM. PI: Merz. *$1.1M direct + indirect*
The goal of this study is to explore the comparative biochemistry of Vps-C protein complexes (HOPS and CORVET) and their functions in endocytic traffic.

2009 *NIH Small Instrumentation Grant: Analytical Ultracentrifuge*. PI: Klevit.

2009 *Protein phosphorylation in vacuole fusion*. NIH P41RR011824-14, sub. 8009. PI: Davis.

2009 *Protein interactions with vacuole machinery*. NIH P41RR011824-14, sub. 8061. PI: Davis.

15a. **Bibliography**

H-index: 32; mean citations per paper: >100.

Preprint

- Duan M*, Plemel RL*, TakenakaT , Lin A, Natterman U, Mima J, Miller EA, **Merz AJ**. Gatekeeper helix activates ER-Golgi SM protein Sly1 and directly mediates close-range vesicle tethering.
- Duan M, Gao G, Banfield DK, **Merz AJ**. Golgi SM protein Sly1 promotes productive trans-SNARE complex assembly through multiple mechanisms**.**
- Plemel RL, Odorizzi G and **Merz AJ**. Plate-based assay of AP-3 membrane traffic in budding yeast. *bioRxiv*, doi: 10.1101/314286 (Under revision, *Traffic*)

In Prep

- **Merz AJ**, Plemel R, Chertova CG, Fawcett E., West M and Odorizzi G. AP-3 vesicle budding regulates maturation of the entire *trans*-Golgi compartment.

Published:

45. Ledvina HD, Cundiff JA, Kelly, KA, Plemel RL, Eshraghi A, Brook S, Peterson SB, Lee B, Alder M, **Merz AJ**, Shawn J. Skerrett SJ, Celli J and Mougous JD. 2018. A phosphoinositide 3-kinase effector alters phagosomal trafficking to promote intracellular growth of *Francisella. Cell Host & Microbe*. doi: 10.1016/j.chom.2018.07.003
44. Rayermann S, Rayermann G, ***Merz AJ** and *Keller SL. 2017. Hallmarks of reversible phase separation in unperturbed membranes of living cells. *Biophysical Journal*. doi: 10.1016/j.bpj.2017.09.029
**Corresponding authors. **Physics Today Feature Article: doi: 10.1063/PT.3.3838*
43. Schwartz ML, Nickerson DP, Lobingier BT, Plemel RL, Duan M, Angers CG, Zick M and **Merz AJ**. 2017. Sec17 (α-SNAP) and an SM-tethering complex regulate the outcome of SNARE zippering *in vitro* and *in vivo*. *eLife*. doi: 10.7554/eLife.27396
**Nature News & Views: doi:* 10.1038/Nature24754
42. Song H, Orr A, Duan M, **Merz AJ** and Wickner W. 2017. Sec17/Sec18 act twice, enhancing membrane fusion and then disassembling *cis*-SNARE complexes. *eLife*. doi: 10.7554/eLife.26646
** Nature News & Views: doi*: *10.1038/Nature24754*
41. Cattin-Ortolá J, Topalidou I, Dosey A, **Merz AJ** and Ailion MA. 2017. The dense-core vesicle trafficking protein CCCP-1 binds RAB-2 and membranes through its C-terminal coiled-coil domain. *Traffic. doi*: 10.1111/tra.12507
40. Sunshine AB, Ong GT, Nickerson DP, Carr D, Murakami CJ, Wasko, BM, Shemorry A, **Merz AJ**, Kaeberlein M and Dunham MJ. 2016. Aneuploidy shortens replicative lifespan in *Saccharomyces cerevisiae*. *Aging Cell*. doi: 10.1111/acel.12443
39. Nickerson DP and **Merz AJ**. 2015. LUCID: quantitative assay of ESCRT-dependent cargo packaging into the MVB. *Traffic. doi*: 10.1111/tra.12331

38. Chapin HC, Okada M, **Merz AJ** and Miller DM. 2015. Tissue-specific autophagy responses to aging and stress in *C. elegans*. *Aging*. doi: 10.18632/aging.100765
37. Zick M, Orr A, Schwartz ML, **Merz AJ** Wickner WT. 2015. Sec17 can trigger fusion of *trans*-SNARE paired membranes without Sec18. *Proceedings of the National Academy of Sciences.* doi: 10.1073/pnas.1506409112
    ** Nature News & Views: doi*: *10.1038/Nature24754*
36. Schideler T, Nickerson DP, **Merz AJ*** and Odorizzi G*. 2015. Ubiquitin binding promotes Vps9 localization in endolysosomal membrane trafficking. *Molecular Biology of the Cell.* *doi*: 10.1091/mbc.E14-06-1156
    **Co-corresponding authors.*
35. **Merz AJ**. 2014. Minireview: What are the roles of V-ATPases in membrane fusion? *Proceedings of the National Academy of Sciences. doi*: 10.1073/pnas.1422280112
34. Lobingier BT, Nickerson DP, Lo S-Y and **Merz AJ**. 2014. SM proteins Sly1 and Vps33 co-assemble with Sec17 and SNARE complexes to oppose SNARE disassembly by Sec18, *eLife.* *doi*: 10.7554/eLife.02272
    **eLife Insight Minireview by M. Munson doi: 10.7554/eLife.03374*
33. Brodsky J, **Merz A** and Serio T. 2014. Meeting report: Organelle and protein quality control mechanisms: how cells keep calm and carry on. *Molecular Biology of the Cell.* *doi*: 10.1091/mbc.E13-11-0672
32. Paulsel AL, **Merz AJ** and Nickerson DP. 2013. Vps9 family protein Muk1 is a second Rab5 GEF in budding yeast. *Journal of Biological Chemistry*. doi: 10.1074/jbc.M113.457069
31. Lockshon D, Olson CP, Brett CL, Chertov A, **Merz AJ**, LorenzDA, Van Gilst M, Kennedy BK. 2012. Rho signaling participates in membrane fluidity homeostasis. *PLoS ONE*. doi: 10.1371/journal.pone.0045049
30. Lobingier BT and **Merz AJ**. 2012. Sec1/Munc18 protein Vps33 binds to SNARE domains and the quaternary SNARE complex. *Molecular Biology of the Cell*. doi: 10.1091/mbc.E12-05-0343
29. Nickerson DP, Russell MRG, Lo SY Milnes J and **Merz AJ**. 2012. Termination of isoform-specific Vps21/Rab5 signaling at endolysosomal organelles by Msb3/Gyp3. *Traffic*. doi: 10.1111/j.1600-0854.2012.01390.x
28. Lo S-Y, Brett CL, Plemel R, Vignali M, Fields S, Gonen T and **Merz AJ**. 2012. Intrinsic tethering activity of endosomal Rab proteins. *Nature Structural and Molecular Biology*. doi: 10.1038/nsmb.2162
    **Faculty of 1000 Recommended.*
27. *Plemel RL, *Lobingier BT, Brett CL, Nickerson, DP, Angers CG, Paulsel A, Sprague D and **Merz AJ**. 2011. Subunit organization and Rab interactions of Vps-C complexes that control endolysosomal membrane traffic. *Molecular Biology of the Cell*. doi: 10.1091/mbc.E10-03-0260
    **Equal contributors.*
26. Angers C and **Merz AJ**. 2011. *Review*: New links between vesicle coats and Rab-mediated vesicle targeting. *Seminars in Cell and Developmental Biology*. doi: 10.1016/j.semcdb.2010.07.003

25. Hood RD, Singh P, Hsu F, Güvener T, Carl MA, Trinidad RRS, Silverman JM, Ohlson BB, Hicks KG, Plemel RL, Li M, Schwartz S, Wang WY, **Merz AJ**, Goodlett D, Mougous J. 2010. Discovery of Type VI secretion substrates in *Pseudomonas aeruginosa*: identification of a toxin targeted to bacteria. *Cell Host & Microbe*. doi: 10.1016/j.chom.2009.12.007
**Cover article; Faculty of 1000 Must Read.*

24. Zheng H, Taraska J, **Merz AJ** and Gonen T. 2010. The prototypical H^+/galactose symporter GalP assembles into functional trimers. *Journal of Molecular Biology*. doi: 10.1016/j.jmb.2009.12.010
**Cover article.*

23. Angers C and **Merz AJ**. 2009. HOPS interacts with Apl5 at the vacuole membrane and is required for consumption of AP-3 transport vesicles. *Molecular Biology of the Cell*. doi: 10.1091/mbc.E09-04-0272

22. Nickerson DP, Brett CL and **Merz AJ**. 2009. *Review*: Vps-C complexes: gatekeepers of endolysosomal membrane traffic. *Current Opinion in Cell Biology*. doi: 10.1016/j.ceb.2009.05.007

21. Colette JR, Chi RJ, Boettner DR, Fernandez-Golbano IM, Plemel RL, **Merz AJ**, Geli MI, Traub LM, Lemmon SK. 2009. Clathrin functions in the absence of the terminal domain binding site for adaptor-associated clathrin-box motifs. *Molecular Biology of the Cell*. doi: 10.1091/mbc.E08-10-1082

20. Schwartz ML and **Merz AJ**. 2009. Capture and release of partially-zipped *trans*-SNARE complexes on intact organelles. *Journal of Cell Biology*. doi: 10.1083/jcb.200811082

19. Brett CL, Plemel RL, Lobingier BT, Vignali M, Fields S and **Merz AJ**. 2008. Efficient termination of vacuolar Rab GTPase signaling requires coordinated action by a GAP and a protein kinase. *Journal of Cell Biology*. doi: 10.1083/jcb.200801001
**JCB featured paper; Faculty of 1000 Recommended.*

18. Brett CL and **Merz AJ**. 2008. Osmotic regulation of Rab-mediated organelle docking. *Current Biology* 18:1072-1077. doi: 10.1016/j.cub.2008.06.050

17. Lee SW, Higashi DL, Snyder, A, **Merz AJ**, Potter L and So M. 2005. PilT is required for PI(3,4,5)P-mediated crosstalk between *Neisseria gonorrhoeae* and epithelial cells. *Cellular Microbiology* 7:1271-1284. doi: 10.1111/j.1462-5822.2005.00551.x

16. Thorngren N, Collins KM, Fratti R, Wickner WT and **Merz AJ**. 2004. A soluble SNARE drives rapid docking, bypassing the need for ATP and Sec17/18p for vacuole fusion. *EMBO Journal*. doi: 10.1038/sj.emboj.7600286

15. **Merz AJ** and Wickner WT. 2004. Resolution of organelle docking and fusion kinetics in a cell-free assay. *Proceedings of the National Academy of Sciences*. doi: 10.1083/jcb.200310105

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13. **Merz AJ** and Wickner WT. 2004. *Trans*-SNARE interactions elicit Ca^{2+} efflux from the yeast vacuole lumen. *Journal of Cell Biology*. doi: 10.1083/jcb.200310105

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11. Wang L, **Merz AJ**, Collins KM and Wickner WT. 2003. Hierarchy of protein assembly at the vertex ring domain for yeast vacuole docking and fusion. *Journal of Cell Biology*. doi: 10.1083/jcb.200209095
10. Boeddinghaus C, **Merz AJ**, Laage R and Ungermann C. 2002. A cycle of Vam7p release from and PtdIns-3-P-dependent rebinding to the yeast vacuole is required for homotypic vacuole fusion. *Journal of Cell Biology*. doi: 10.1083/jcb.200112098
    **Faculty of 1000 Recommended Paper.*
9. **Merz AJ** and Forest KT. 2002. *Review:* Bacterial surface motility: slime trails, grappling hooks, and nozzles. *Current Biology*. doi: 10.1016/S0960-9822(02)00806-0
8. Wang L, Seeley, S, Wickner WT and **Merz AJ**. 2002. Vacuole fusion at a ring of vertex docking sites leaves membrane fragments within the organelle. *Cell*. doi: 10.1016/S0092-8674(02)00632-3
7. **Merz AJ**, So M and Sheetz MP. 2000. Pilus retraction powers bacterial twitching motility. *Nature*. doi: 10.1038/35024105
6. **Merz AJ** and So M. 2000. *Review:* Interactions of pathogenic Neisseriae with epithelial cell membranes. *Ann. Rev. Cell and Developmental Biology*. doi: 10.1146/annurev.cellbio.16.1.423
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4. **Merz AJ**, Enns CA and So M. 1999. Type IV pili of pathogenic Neisseriae elicit cortical plaque formation in epithelial cells. *Molecular Microbiology*. doi: 10.1046/j.1365-2958.1999.01459.x
    **Cover article.*
3. **Merz AJ** and So M. 1997. Attachment of piliated, Opa- and Opc- gonococci and meningococci to epithelial cells elicits cortical actin rearrangements and clustering of tyrosine-phosphorylated proteins. *Infection and Immunity* 65:4341-4349. PMCID: PMC175623
2. **Merz AJ**, Rifenbery DB, Arvidson CG and So M. 1996. Traversal of a polarized epithelium by pathogenic Neisseriae: facilitation by type IV pili and maintenance of epithelial barrier function. *Molecular Medicine* 2:745-754. PMCID: PMC2230138
1. Waldbeser LS, Ajioka RS, **Merz AJ**, Puaoi D, Lin L, Thomas M and So M. 1994. The *opaH* locus of *Neisseria gonorrhoeae* MS11A is involved in epithelial cell invasion. *Molecular Microbiology*. doi: 10.1111/j.1365-2958.1994.tb00483.x

16b. **Selected talks**

2019 Seminar, Colorado State University, Fort Collins, Colorado.

2018 Seminar, Laboratory of Molecular Biology, Cambridge, England.

2018 Seminar, University of Osnabrück, Germany.

2018 Invited Speaker, Lysosomes & Endocytosis Gordon Conference.

2018 Invited Speaker, Seoul Membrane Traffic Symposium, South Korea.

2017 Invited Lecture, 38th Steenbock Symposium, University of Wisconsin.

2016 Seminar, Western Washington University.

2016 Invited Speaker, University of Georgia 2016 Molecular and Cellular Biology Graduate Student Symposium.

2015 Speaker, Mini-Symposium on Secretory Traffic. *American Society for Cell Biology Annual Meeting.*

2015 Invited Speaker, Molecular Membrane Biology Gordon Conference.

2014 Invited Lecture, University of Washington-Kobe University Joint Symposium on Membrane Biology, Kobe, Japan.

2014 Seminar, NIH–NHLBI, Bethesda.

2014 Seminar, HHMI Janelia Farm.

2014 Seminar, Concordia University, Canada.

2014 Seminar, Geisel School of Medicine at Dartmouth, Dept. of Biochemistry.

2014 Seminar, University of Iowa School of Medicine, MCB Program.

2013 Co-Chair, Symposium on Protein and Organelle Quality Control. *American Society for Cell Biology Annual Meeting.*

2013 Seminar, UC Santa Cruz, MCD Biology.

2013 Seminar, UT Southwestern, Department of Biochemistry.

2012 Speaker, Gordon Research Conference: Lysosomes & Endocytosis.

2012 Seminar, UCLA Molecular Biology Institute.

2012 Seminar, Dept. of Microbiology, University of Washington.

2012 Seminar, Dept. of Physiology & Biophysics, University of Washington.

2011 Speaker, Mini-Symposium on Membrane Fission and Fusion. *American Society for Cell Biology Annual Meeting.*

2011 Invited Lecture, School of Medicine, Korean National University, Daegu.

2010 Seminar, Dept. of Molecular, Cell, and Developmental Biology, University of Colorado, Boulder.

2010 Invited Lecture, 4th Global COE Workshop on Integrated Membrane Biology: Endosomal Traffic and Beyond. University of Kobe, Japan.

2009 Seminar, Dept. of Physiology, Johns Hopkins University School of Medicine.

2008 Vps-C tethering complexes in late endocytic traffic. *ASCB Annual Meeting*.

2008 A Rab-dependent, effector-independent vesicle tethering reaction. *ASCB Annual Meeting:*

Monomeric GTPases Special Interest Subgroup.

2008 Seminar, Seattle Biomedical Research Institute.

2008 A truncated SNARE traps prefusion *trans*-complexes*. Gordon Research Conference: Molecular Cell Biology*.

2007 Membrane tension promotes fusion by activating Rab-mediated tethering and docking. *60th Annual Symposium, Society of General Physiologists: Membrane Biophysics of Fusion, Fisssion, and Rafts in Health and Disease. J. Gen Physiol.* 130:13a. Presented by postdoctoral trainee, C. Brett.

2007 Chair (with M. Kaksonen), Workshop on Protein Transport and Turnover, *XXIII International Conference on Yeast Genetics and Molecular Biology*, Melbourne, Australia.

2007 Seminar, Department of Physiology and Biophysics, University of Washington.

2006 Seminar, Department of Cell Biology and Anatomy and Liver Research Center, Albert Einstein School of Medicine.

2005 Seminar, Cellular and Molecular Biology, Oregon Health & Science University.

2005 Seminar, Department of Biology, Reed College.

2004 Steps to fusion: assembly of a complex docking junction between yeast vacuoles. *Gordon Research Conference: Lysosomes and Endocytosis.*

2004 Seminar, Department of Biochemistry and Biophysics, UC San Francisco.

2004 Seminar, Department of Biochemistry, University of Washington.

2004 Seminar, MCDB Department, UC Santa Barbara.

2004 Seminar, Department of Biochemistry, Duke University.

2004 Seminar, Department of Biological Sciences, Columbia University.

2003 Seminar, Department of Molecular Microbiology and Immunology, Oregon Health & Science University.

2000 Pilus retraction powers twitching motility and pattern formation by *Neisseria gonorrhoeae*. *Gordon Research Conference: Bacterial Cell Surfaces*.

1999 Adhesion of pathogenic *Neisseriae*: type IV pili trigger cortical rearrangements in epithelial cells. *ASM Conference: A Cell Biology Approach to Microbial Pathogenesis*.

1996 ASM Foundation Lecture: How the pathogenic *Neisseriae* modify host cell functions during mucosal colonization. *Ohio and Indiana Regional ASM Meeting.*

16d. **Research collaborations**

M. Ailion, UW. Biogenesis of dense core secretory vesicles.

D. Fowler, UW. Quantitative saturation mutagenesis of fusion factors.

F. Hughson, Princeton. Structure and function of vesicle tethers.

S. Keller, UW. Phase separation in the organization of biological membranes.

J. Kollman, UW. Structure of membrane fusion particles.

E. Miller, LMB-Cambridge, England. Genetic analysis of ER-Golgi docking and fusion.

G. Odorizzi, CU-Boulder. Golgi dynamics and AP-3 traffic.

W. Wickner, Dartmouth–Geisel School of Medicine. Noncanonical Sec17 activities.