

## Curriculum Vitae

### Paul Thomas Matsudaira

#### CURRENT ADDRESS

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#### EDUCATION

1971-1975 U. of Washington, BA Chemistry, BS Biology  
1976-1981 Dartmouth College, PhD Biological Sciences  
1976 Physiology Course, Marine Biological Laboratory

#### PROFESSIONAL EXPERIENCE

1975-1976 Research Technician, Dept. of Zoology, Friday Harbor Labs, University of Washington, laboratory of Dr. Thomas Schroeder.  
1976-1981 Graduate Student, Dept. of Biological Sciences, Dartmouth College, Hanover, NH, laboratory of Dr. David R. Burgess.  
1981 Postdoctoral Fellow, Abteilung Biochemistry, Max Planck Institute for Biophysical Chemistry, Goettingen, FRG, laboratory of Dr. Klaus Weber.  
1981-1984 Postdoctoral Fellow, Division of Structural Studies, Medical Research Council Laboratory of Molecular Biology, Cambridge, UK, supervisor: Dr. Alan Weeds.  
1985-1989 Associate Member, Whitehead Institute for Biomedical Research and Assistant Professor of Biology, Dept. of Biology, MIT.  
1989-1998 Associate Professor of Biology, Dept. of Biology, MIT.  
1992-2008 Member, Whitehead Institute for Biomedical Research  
1995-2000 Director, Program in Molecular Engineering at the MIT Center for Biomedical Engineering  
1998-2008 Professor of Biology, Dept. of Biology, MIT.  
1998-2008 Professor of Bioengineering, Department of Biological Engineering, MIT.  
1999-2001 Associate Chair of the Faculty, MIT  
2000-present co-Founder, GenoMEMS (now ANDE)  
2000-2006 Biology Exchange Supervisor, Cambridge U-MIT Exchange  
2001-2008 Director, Whitehead Institute /MIT Center for BioImaging  
2005-2013 Member, Singapore-MIT Alliance 2 (SMA2) CSB Program  
2005-2008 Co-Director, Singapore-MIT Alliance 2 (SMA2) CSB Program  
2005-2007 Director, MIT Computational and Systems Biology Initiative (CSBi)  
2009-2014 Professor of Bioengineering, Division of Bioengineering, National University of Singapore  
2009-2017 Head, Department of Biological Sciences, NUS  
2009-2017 Founding co-Director, Principal Investigator, MechanoBiology Institute (MBI)  
2009-2020 Distinguished Professor of the University  
2009-2020 Professor of Biological Sciences, Department of Biological Sciences, NUS  
2009-2020 Founding Director, Principal Investigator, NUS Centre for BioImaging Sciences  
2009-2020 Faculty Member, NGS

2012-2020 co-Investigator, SMART (Singapore MIT Alliance for Research and Technology)  
2017-2020/22 co-Investigator/Collaborator, MBI  
2020-present Principal Investigator, NUS Centre for BioImaging Sciences  
2020-present Professor Emeritus, National University of Singapore  
2021-present Co-founder, Paratus Sciences  
2022-2023 Interim CSO, Paratus Sciences

## **PUBLICATIONS (Books)**

- 1 Molecular Cell Biology, 3e, Lodish, H., Baltimore, D. Berk, A., Zipursky S.L, Matsudaira, P., Darnell J. 1996 WH Freeman
- 2 Molecular Cell Biology, 4e, Lodish, H., Berk, A., Zipursky S.L, Matsudaira, P., H., Baltimore D., Darnell J. 2000 WH Freeman
- 3 Molecular Cell Biology, 5e, Lodish, H., Berk, A., Matsudaira, P., Kaiser C., Krieger, M., Scott M.P., Zipursky S.L, Darnell J. 2003 WH Freeman
- 4 Molecular Cell Biology, 6e, Lodish, H., Berk, A., Kaiser C., Krieger, M., Scott M.P., Bretscher A, Ploegh H., Matsudaira, P., 2007 WH Freeman

## **PUBLICATIONS (190)**

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2. Matsudaira P, Burgess DR. 1979. Identification and organization of the components in the isolated microvillus cytoskeleton. *J. Cell. Biol.* 83(3):667-673.
3. Matsudaira P, Burgess DR. 1981. Structure and function of the brush-border cytoskeleton. *CSH Symposia on Quantitative Biology* 46:845-854.
4. Glenney JR, Kaulfus P, Matsudaira P, Weber K. 1981. F-actin binding and bundling properties of fimbrin, a major cytoskeletal protein of microvillus core filaments. *J. Biol. Chem.* 256(17):9283-9288.
5. Matsudaira P, Burgess DR. 1982. Partial reconstruction of the microvillus core bundle: characterization of villin as a Ca<sup>++</sup>-dependent, actin-bundling/depolymerizing protein. *J. Cell. Biol.* 92(3):648-656.
6. Matsudaira P, Burgess DR. 1982. Organization of the cross-filaments in intestinal microvilli. *J. Cell. Biol.* 92(3):657-664.
7. Matsudaira P. 1983. Structural and functional relationship between the membrane and the cytoskeleton in brush border microvilli. *Ciba Found Symp* 95:233-244.
8. Matsudaira P, Mandelkow E, Renner W, Hesterberg LK, Weber K. 1983. Role of fimbrin and villin in determining the interfilament distances of actin bundles. *Nature* 301(5897):209-214.
9. Matsudaira P, Jakes R, Cameron L, Atherton E. 1985. Mapping the cysteine residues and actin-binding regions of villin by using antisera to the amino and carboxyl termini of the molecule. *PNAS* 82(20):6788-6792.
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11. Matsudaira P, Bordas J, Koch MHJ. 1987. Synchrotron x-ray diffraction studies of actin structure during polymerization. *PNAS* 84(10):3151-3155.
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14. Matsudaira P, Janmey PA. 1988. Pieces in the actin-severing protein puzzle. *Cell* 54(2):139-140.
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17. Ezzell RM, Chafel MM, Matsudaira P. 1989. Differential localization of villin and fimbrin during development of the mouse visceral endoderm and intestinal epithelium. *Development* 106(2):407-419.
18. Matsudaira P. 1989. A practical guide to protein and peptide purification for microsequencing-introduction. *Practical Guide to Protein and Peptide Purification for Microsequencing*
19. Kodama T, Freeman M, Rohrer L, Zabrecky J, Matsudaira P, Krieger M. 1990. Type I macrophage scavenger receptor contains alpha-helical and collagen-like coiled coils. *Nature* 343(6258):531-535.
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26. Collins K, Matsudaira P. 1991. Differential regulation of vertebrate myosins I and II. *J. Cell Sci. Suppl.* 11-16.
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62. Ehrlich DJ and P Matsudaira. 1995 *BioMEMS: Biomolecular Information Technology for Defense Needs.* ARPA white paper
63. Schmid MF, Jakana J, Matsudaira P, W Chiu. 1995. Three-dimensional structure of the acrosomal filament of *Limulus* sperm by 400kV electron crymicroscopy. *Biophys J* 68:8s-11s.
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