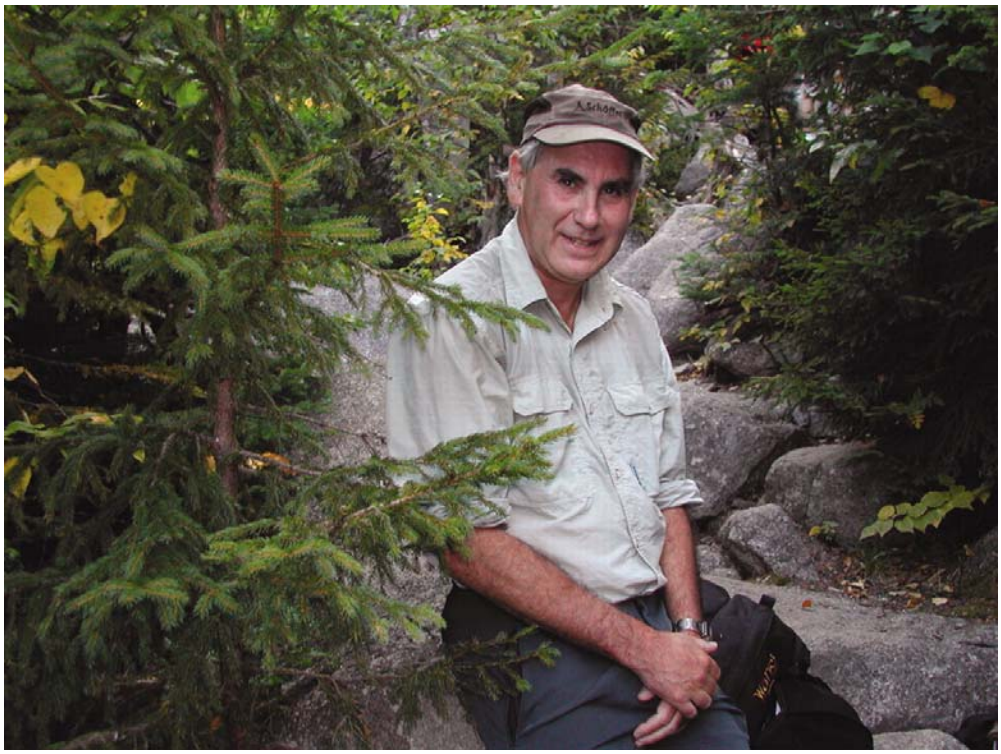

Prof. Tom A. Rapoport
Howard Hughes Medical Institute, Harvard Medical School, Boston, US

Prof. Rapoport is also Professor of Cell Biology at Harvard Medical School. He received his Ph.D. degree from Humboldt University, Berlin (East Germany), and his "Habilitation" from the same institution. Before assuming his current position, he was Professor of Cell Biology at the Academy of Sciences of East Germany and later at the Max Delbrück Center for Molecular Medicine. He is a member of the National Academy of Sciences, a fellow of the American Academy of Arts and Sciences, and a fellow of the American Association for the Advancement of Science.

A. Positions and Honors.

Professional Experience:

1997-present	**Professor**, Howard Hughes Medical Institute, Harvard Medical School, Boston, USA
1995-1997	**Professor**, Harvard Medical School, Boston, USA
1991-1994	**Professor**, Max-Delbrück-Center, Department of Cell Biology, Berlin, Germany
1985-1990	**Professor**, Central Institute for Molecular Biology, Academy of Science, Berlin, GDR

1972-1985 **Research Associate**, Central Institute for Molecular Biology, Academy of Science, Berlin,GDR

Professional Memberships - German Biochemical Society; Academy of Sciences; Academea European; EMBO; Biophysical Society; American Society for Cell Biology; FASEB; American Association for the Advancement of Science; Leopoldina Academy, American Academy of Arts and Sciences, National Academy of Sciences (USA); International Advisory Board of the Göttingen Graduate School for Neurosciences and Molecular Biosciences (GGNB); Scientific Advisory Board of the Dahlem Konferenzen, Freie University

Major Committee Assignments

1999-2002	NIH study section member
1997-1999	Vice Chair/Chair, Gordon Research Conference on Molecular Membrane Biology
2007-2008	Standing Committee on Higher Degrees in Systems Biology
2007-	PQE Steering Committee

Editorial Boards

1989-2004	EMBO Journal
1989-2006	The Journal of Cell Biology
2000-2004	EMBO Reports
2005-present	Proceedings of the National Academy of Sciences (PNAS)

Honors

Johannes-Müller-prize of the Society for Experimental Medicine
Rudolf-Virchow-prize
Otto-Warburg-Medaille of the GBM in the field of Biochemistry (2004)
External Scientific Member of the Max Planck Institute for Biophysical Chemistry (Karl Friedrich Bonhoeffer Institute) in Göttingen (2005)
Max Delbrück Medal recipient

Sir Hans Krebs Medal recipient (2007)
AAAS Fellow (2007)

B. Selected Peer-Reviewed Publications (in chronological order).

(Publications selected since 2002 from 190+ peer-reviewed publications)

Tsai, B. and Rapoport, T.A. (2002) J. Cell Biol. 159(2), 207-216. Unfolded cholera toxin is transferred to the ER membrane and released from protein disulfide isomerase upon oxidation by Ero1.

Morgan, D.G., Menetret, J-F., Neuhof, A., Rapoport, T.A., and Akey, C.W. (2002) J. Mol. Biol. 324(4), 871-86. Structure of the mammalian ribosome-channel complex at 17 Å resolution.

Or, E., Navon, A., and Rapoport, T.A. (2002) EMBO J. 21, 4470-9**.** Dissociation of the dimeric SecA ATPase during protein translocation across the bacterial membrane.

Ye, Y., Meyer, H.H., and Rapoport, T.A. (2003) J. Cell Biol. 162, 71-84. Function of the p97-Ufd1-Np14 complex in retro-translocation from the ER to the cytosol: dual recognition of non-ubiquitinated polypeptide segments and poly-ubiquitination chains.

Tsai, B., Gilbert, J.M., Stehle, T., Lencer, W., Benjamin, T.L., and Rapoport, T.A. (2003) EMBO J. 22, 4346-55. Gangliosides are receptors for murine polyoma virus and SV40.

van den Berg, L., Clemons, W., Collinson, I., Modis, Y., Hartmann, E., Harrison, S.C., and Rapoport, T.A. (2004) Nature 427, 36-44. X-ray structure of a protein-conducting channel.

Le Gall, S., Neuhof, A., and Rapoport, T.A. (2004) Mol. Biol. Cell 15, 447-455. The ER membrane is permeable to small molecules.

Ye, Y., Shibata, Y., Yun, C., Ron, D., and Rapoport, T.A., (2004) Nature 429, 841-847**.** A membrane protein complex mediates retro-translocation from the ER lumen into the cytosol.

van den Berg., L., Black, P.N., Clemons, W.M., Jr., and Rapoport, T.A. (2004) Science 304, 1506-1509. Crystal structure of the long-chain fatty acid transporter FadL

Osborne, A.R., Clemons, W.M., Jr., and Rapoport, T.A. (2004) Proc. Nat. Acad. Sci. 101, 10937-42**.** A large conformational change of the translocation ATPase SecA.

Clemons, W.M. Jr., Ménétret, J.-F., Akey, C.W., and Rapoport, T.A. (2004) Curr. Opin. in Struct. Biol. 14, 390-6**.** Structural insight into the protein translocation channel.

Rapoport, T.A., Goder, V., Heinrich, S.U., and Matlack, K.E.S. (2004) Trends in Cell Biology 14, 568-575. Membrane-protein integration and the role of the translocation channel.

Cannon, K., Or, E., Clemons, W.M., Jr., Shibata, Y., and Rapoport, T.A. (2005) J. Cell Biol. 169, 219-225. Disulfide bridge formation between a translocating polypeptide and SecY localizes the translocation pore to the center of SecY.

Ye, J., Osborne, A.R., Groll, M., and Rapoport, T.A. (2004) Biochem. Biophys. Acta 1659, 1-18. RecA-like motor ATPases – lessons from structures.

Heinrich, R. and Rapoport, T.A. (2005) J. Cell Biol. 168, 271-280. Generation of non-identical compartments in vesicular transport systems.

Ye, Y., Shibata, Y., Kikkert, M., van Voorden, S., Wiertz, E., and Rapoport, T.A. (2005) Proc. Nat. Acad. Sci. 102, 14132-14138. Recruitment of the p97 ATPase and ubiquitin ligases to the site of retrotranslocation at the endoplasmic reticulum membrane.

Osborne, A.R., Rapoport, T.A., and van den Berg, B. (2005) Annu. Rev. Cell. Dev. Biol. 21, 529-550. Protein translocation by the Sec61/SecY channel.

Voeltz, G., Prinz, W.A., Shibata, Y., Rist, J.M., and Rapoport, T.A. (2006) Cell 124, 573-86. A class of membrane proteins shaping the tubular endoplasmic reticulum.

Carvalho, P., Goder, V., and Rapoport T.A. (2006) Cell 126, 361-73. Distinct ubiquitin-ligase complexes define convergent pathways for the degradation of ER proteins.

Flierman, D., Coleman, C.S., Pickart, C.M., Rapoport, T.A., and Chau, V. (2006) Proc. Nat. Acad. Sci. 103, 1589-94. E2-25K mediates US11-triggered retro-translocation of MHC class I heavy chains in a permeabilized cell system.

Schaletzky, J. and Rapoport, T.A. (2006) Mol. Biol. Cell 17, 3860-69. Ribosome binding to and dissociation from translocation sites of the endoplasmic reticulum membrane.

Osborne, A.R., and Rapoport, T.A. (2007) Cell 129, 97-110. Protein translocation is mediated by oligomers of the SecY complex with one SecY copy forming the channel.

Rapoport, T.A. (2007) Nature 450, 663-669. Protein translocation across the eukaryotic ER and bacterial plasma membranes.

Tom Rapoport 教授 1947 年誕生於辛辛那提，三歲時因麥卡錫主義波及，隨父母重返德國。由於父母一為小兒科醫師，一為生化學家，因此 Rapoport 教授的科學研究興趣與習慣，從小便獲得啟發。他在 25 歲以研究 inorganic pyrophosphatase 之酵素動力學獲得博士學位。

Rapoport 教授目前任職於哈佛大學醫學院細胞生物系及 Howard Hughes Medical Institutes ，為目前研究蛋白質如何進出內質網的知名研究學者。其多項研究成果更早已獲 Cell、 Nature 、Science 等國際知名重量級期刊刊載。且為美國藝術與科學院院士及美國國家科學院院士。在蛋白質轉運與降解研究方面取得重大突破。

在任何細胞中，錯誤摺疊的蛋白質必須被確實摧毀。這個過程並不發生在內質網（endoplasmic reticulum ） 之中，因內質網是負責分泌輸出摺疊正確並包裹好的蛋白質；取而代之的則是，錯誤摺疊的蛋白質，必須重新輸送穿過內質網，回到細胞質。2005 年獲選成為美國國家科學院院士的 Tom Rapoport 教授，其科學生涯中，有一大段時間，花在研究 membrane channel Derlin-1 ：一個從細胞質可以輸出蛋白的膜通道蛋白。在近五年的研究中，他找到並研究 reverse protein movement process of retrotranslocation，他確定了一系列與 retrotranslocation complex 相關的蛋白質，如 p97，並研究其結構。同時，他也放了大幅的重心在針對 signal recognition particle (SRP)序列的確定以及 TRAM 和 Sec61P 蛋白的研究；相當重要的是以 Sec61P 及其大腸桿菌同源蛋白 SecY 的蛋白質單晶晶體結構來闡明 translocation machinery 之機制與機制的重要性，以及其在演化上是如何保守。