Michael Rape

Investigator, Howard Hughes Medical Institute

K. Peter Hirth Chair of Cancer Biology
Professor of Cell and Developmental Biology

Department of Molecular and Cell Biology
University of California at Berkeley
300B Li Ka Shing Center
Berkeley, CA 97420-3202

EDUCATION:

2002	Dr. rer. nat. (equivalent to Ph.D.) in biochemistry, *summa cum laude* Max-Planck-Institute of Biochemistry, Martinsried, Germany
1999	Diploma (equivalent to M.Sc.) in biochemistry, *with highest honors* Bayreuth University, Bayreuth, Germany
1994-1999	Study of biochemistry Bayreuth University, Bayreuth, Germany University of Delaware, Newark, USA
1993	Abitur (Gymnasium Selb, Abschlussnote: 1.0)

POSITIONS AND EMPLOYMENT:

2014-present	K. Peter Hirth Chair of Cancer Biology, UC Berkeley
2013-present	Investigator, Howard Hughes Medical Institute
2013-present	Professor of Cell and Developmental Biology Department of Molecular and Cell Biology, UC Berkeley
July 2011-2013	Associate Professor of Cell and Developmental Biology with tenure Department of Molecular and Cell Biology, UC Berkeley
Oct. 2006 – 2011	Assistant Professor of Cell and Developmental Biology Department of Molecular and Cell Biology, UC Berkeley
2003-2006	Postdoctoral Fellow with Prof. Marc W. Kirschner Department of Systems Biology, Harvard Medical School, Boston, USA
2000-2002	Graduate Student with Prof. Stefan Jentsch Max-Planck-Institute of Biochemistry, Martinsried, Germany
1999	Diploma Student with Prof. Franz Schmid Bayreuth University, Bayreuth, Germany

AWARDS & HONORS:

2016	National Blavatnik Laureate in the Life Sciences
2015	Board of Reviewing Editors, eLife
2015	Finalist, National Blavatnik Award
2014	K. Peter Hirth Endowed Chair of Cancer Biology, UC Berkeley
2014	Finalist, National Blavatnik Award
2014	Editorial Board, Molecular Cell
2013	Investigator, Howard Hughes Medical Institute
2013	Curci Foundation Award
2013	Vilcek Award for Creative Promise
2012	Bakar Fellow, University of California at Berkeley
2011	Editorial Board, EMBO Reports
2011	Editorial Board, Journal of Cell Science
2011	Editorial Board, Current Protocols in Chemical Biology
2010	Board of Reviewing Editors, Molecular Biology of the Cell
2009	Member, Faculty of 1000
2007	NIH Director's New Innovator Award
2007	Pew Scholar Award
2007	Kimmel Scholar Award (declined)
2004-2006	Long-Term Fellowship of the Human Frontier Science Program
2003	Long-Term Fellowship of the European Molecular Biology Organization (EMBO)
2002	Dissertation "summa cum laude"
2002	Otto-Hahn Medal of the Max-Planck Society
2001	Max-Planck Institute of Biochemistry Junior Research Award
2000-2002	Ph.D. Fellowship of the Boehringer Ingelheim Foundation
1999	Diploma "with highest honors"
1996-1999	Fellowship of the German National Scholarship Foundation (Studienstiftung des Deutschen Volkes)
1994-1999	Bavarian Fellowship for very talented students (Bayerische Begabtenfoerderung)

SELECT INVITED KEYNOTE OR NAMED LECTURES:

2016	Distinguished Lecture Series, Max Planck Institute of Biochemistry (Germany)
2015	President's Lecture, Sanford Burnham Prebys Medical Discovery Institute
2015	Keynote Lecture, ETH Zurich (Switzerland)
2014	Keynote Lecture, Boehringer Ingelheim Foundation Meeting, Woods Hole
2014	Keynote Lecture, Ubiquitin and Drug Discovery, San Diego
2011	3rd SCILLS lecture, Dundee, UK
2011	George Connell Lecture, University of Toronto, Canada

SELECT INVITED LECTURES (last four years):

2016	Columbia University; Yale University; UT Southwestern Dallas; Stanford University; University of California Los Angeles; Max Delbrueck Center Berlin; Medical University of South Carolina; Keystone Ubiquitin meeting; FASEB Ubiquitin meeting; Mayo Clinic, Rochester; Max Planck Institute of Biochemistry, Germany; New York Academy of Sciences; Janelia Farms (HHMI); ASCB meeting

2015	Strasbourg (France); Van Andel Research Institute Student Symposium; Princeton University; Memorial Sloan Kettering Cancer Center; University of Pennsylvania Abramson Cancer Center; Ubiquitin and Disease Workshop (Beijing, China); Cold Spring Harbor Meeting Ubiquitin Family; EMBO Ubiquitin Meeting (Dubrovnik Croatia); Howard Hughes Medical Institute; Gordon Conference Cell Growth (Vermont); University of Wisconsin Student Lecture; ETH Zurich (Switzerland); Kirschner Symposium (Harvard, Boston); IFOM (Milan, Italy)
2014	EMBO Ubiquitin and RNA Meeting (Buenos Aires, Argentina); Ubiquitin Workshop (Nara, Japan); Kyoto University (Kyoto, Japan); Howard Hughes Medical Institute; New York University; Stanford University; University of Massachusetts; Boehringer Ingelheim Foundation Meeting; Cold Spring Harbor Meeting Cell Cycle; Protein Society Meeting; American Society for Biochemistry and Molecular Biology Meeting; Keystone Ubiquitin Meeting; Blavatnik Science Scholar Symposium; FASEB Ubiquitin Meeting; University of Colorado; University of Delaware; Siebel Stem Cell Symposium; Ubiquitin and Drug Discovery Meeting San Diego
2013	Gordon Conference Collagen; Mexican Society of Cell Biology, San Lius Potosi (Mexico); EMBO Ubiquitin Meeting (Riva del Garda, Italy); Yale University; Salk Cell Cycle Meeting; UCSF Biochemistry Series; UCSF Helen Diller Cancer Center; Cold Spring Harbor Ubiquitin Meeting; Ubiquitin and Drug Discovery, Las Vegas; UC Davis
2012	Korean Society of Cell Biology; Konstanz University (Germany); EMBL Quality Control Meeting (declined); NIH, Bethesda; FASEB Ubiquitin Meeting; UT Southwestern Medical School; Wayne State University; Keystone Ubiquitin Meeting; Caltech, Pasadena

SERVICE:

2016-present	Chair, NIH Study Section Cellular Signaling and Regulatory Systems
2015-present	Co-Organizer, Cold Spring Harbor Meeting “Ubiquitin Family”
2014-present	Organizer, 2016 Keystone Meeting Ubiquitin (Whistler Mountain)
2014-present	Member, NIH Study Section Cellular Signaling and Regulatory Systems
2013	Site visit member; NCI Frederick
2012	NIH PO1 review panel
2012-present	Editorial Boards of eLife; Molecular Cell; Journal of Cell Science; EMBO Reports; Molecular and Cell Biology; Current Protocols in Chemical Biology; F1000 Research
2012-present	Tenure committees and evaluation for LMB Cambridge (UK); NIH; Indiana University; University of Dundee, New York University; UCSD
2008-present	Grant review panels for NIH; NSF; Medical Research Council, UK; Swiss National Science Foundation; Boehringer Ingelheim Foundation; Austrian Science Foundation; Welcome Trust, UK; European Research Council; Humboldt Foundation, Germany; Deutsche Forschungsgemeinschaft, Germany
2007-present	Reviewer for Cell, Molecular Cell, Developmental Cell, Cancer Cell, Cell Reports, Science, Nature, Nature Cell Biology, Nature Structural and Molecular Biology, Nature Chemical Biology, Nature Communications, Genes and Development, PNAS, Molecular Biology of the Cell, Molecular Cell Biology, Journal of Cell Biology, EMBO Journal, EMBO Reports, Annual Reviews of Biochemistry, Chemistry and Biology, JACS, International Journal of Cancer Research, Journal of Cell Science, PLoS Biology, eLIFE

SELECT FIRST AND SENIOR AUTHOR PUBLICATIONS:

McGourty CA, Akopian D, Walsh C, Gorur A, Schekman R, Bautista D, and **Rape M.** (2016). Regulation of the CUL3 ubiquitin ligase by a calcium-dependent co-adaptor. Cell *in press*

Schaletzky J, and **Rape M**. (2016). Getting a grip on microtubules. Cell 164(5):836-7.

Craney A, Kelly A, Jia L, Fedrigo I, Yu H, and **Rape M**. (2016). Control of APC/C-dependent ubiquitylation by reversible phosphorylation. Proc. Natl. Acad. Sci. USA 113(6):1540-5.

Werner A., Iwasaki S., McGourty C., Medina-Ruiz S., Teerikorpi N., Fedrigo I., Ingolia N. , and **Rape M.** (2015). Cell fate determination by ubiquitin-dependent regulation of translation. Nature 525, 523-37. [Research Highlight in Nat. Rev. Mol. Cell Biol]

Kelly, A, Wickliffe, KE, Song, L, Federigo, I., and **Rape M.** (2014). Ubiquitin chain formation requires E3-dependent tracking of the emerging conjugate. Mol. Cell 56(2): 232-45. [Preview in Mol. Cell; Faculty of 1000]

Meyer, HJ., and **Rape M.** (2014). Enhanced protein degradation by branched ubiquitin chains. Cell 157 (4): 910-921 [Preview in Cell]

Song L., Craney A., and **Rape M.** (2014). Microtubule-dependent regulation of mitotic protein degradation. Mol. Cell 23;53(2):179-92. [Issue highlight of Mol. Cell; News and Views in Mol. Cell; Research Highlight in Nature Reviews Mol. Cell Biol.; Digital highlight in Biotechniques; Faculty of 1000]

Williamson A., Werner A., and **Rape M.** (2013). The Colossus of ubiquitylation – decrypting a cellular code. Mol. Cell 49(4):591-600

Jin L, Bajai K, Wickliffe K, Gorur A, Schekman R, and **Rape M.** (2012). Ubiquitin-dependent regulation of COPII coat size and function. Nature 482(7386):495-500. [News and Views in Nature; Preview in Cell; Faculty of 1000]

Komander D, and **Rape M.** (2012). The ubiquitin code. Annu. Rev. Biochem. 81:203-29.

Williamson A*, Banerjee S*, Zhu X, Philipp I, Iavarone AT, and **Rape M**. (2011). Regulation of ubiquitin chain initiation to control the timing of substrate degradation. Mol Cell 42, 744-57. [Highlight in Nature Rev. Mol Cell Biol.]

Wickliffe KE*, Lorenz S*, Wemmer D, Kuriyan J, and **Rape M.** (2011) The mechanism of ubiquitin chain formation by a single-subunit E2. Cell 144, 769-781 [Preview in Nat. Struct. Mol. Biol.; Faculty of 1000]

Wickliffe KE, Williamson A, Meyer HJ, Kelly A, **Rape M**. (2011). K11-linked ubiquitin chains as novel regulators of cell division. Trends Cell Biol. 21(11):656-63.

Matsumoto M*, **Wickliffe KE***, et al. (2010). K11-Linked Polyubiquitination in Cell Cycle Control Revealed by a K11 Linkage-Specific Antibody. Mol. Cell 39(3):477-84 [Faculty of 1000]

Song EJ, Werner SL, Neubauer J, Stegmeier F, Aspden J, Rio D, Harper JW, Elledge SJ, Kirschner MW, and **Rape M.** (2010). The Prp19 complex and the Usp4^{Sart3} deubiquitinating enzyme control reversible ubiquitination at the spliceosome. Genes Dev. 24, 1434-47.

Song L, and **Rape M.** (2010). Regulated degradation of spindle assembly factors by the anaphase-promoting complex. Mol. Cell 38, 369-82.

Rape M (2010) Assembly of K11-linked ubiquitin chains by the anaphase-promoting complex. Subcell. Biochem. 54: 107-115

Williamson A*, Wickliffe KE*, Mellone BG, Song L, Karpen G, and **Rape M.** (2009). Identification of a physiological E2 module for human APC/C. Proc. Natl. Acad. Sci. USA. 106(43):18213-8. [Faculty of 1000]

Ye Y and **Rape M.** (2009). Building ubiquitin chains: E2 enzymes at work. Nat. Rev. Mol. Cell Biol. 10(11):755-64.

Jin, L.*, Williamson, A.*, Banerjee, S., Phillip, I., and **Rape M.** (2008). Mechanism of ubiquitin chain formation by the human Anaphase-Promoting Complex. Cell, 133, 653-665. [*Preview* in Cell]

Reddy, S.K.*, **Rape, M.***, and Kirschner M.W. (2007). Ubiquitination by the anaphase-promoting complex drives spindle checkpoint inactivation. Nature 446, 921-925.* *These authors contributed equally to this work.* [*News and Views* in Nature, Nature Reviews Molecular and Cell Biology, Faculty of 1000 Biology, Journal of Cell Biology]

Stegmeier, F.*, **Rape, M.***, et al. (2007). Anaphase initiation is regulated by antagonistic ubiquitination and deubiquitination activities. Nature 446, 876-881.* *These authors contributed equally to this work.* [*News and Views* in Nature, Nature Reviews Molecular and Cell Biology, Faculty of 1000 Biology, Journal of Cell Biology]

Rape, M., Reddy, S.K., and Kirschner, M.W. (2006). The anaphase-promoting complex controls substrate ordering by an intrinsic process akin to kinetic proofreading. Cell 124, 89-103. [*News and Views* in Cell, Nature Reviews Molecular and Cell Biology, Journal of Cell Biology, Nature Structural and Molecular Biology]

Richly, H.*, **Rape, M.*,** Braun, S., Rumpf, S., Hoege, C., and Jentsch, S. (2005). A series of ubiquitin binding factors connects CDC48/p97 to substrate multiubiquitylation and proteasomal targeting. Cell 120, 73-84.
** These authors contributed equally to this work*.

Rape, M., and Kirschner, M.W. (2004). Autonomous regulation of the anaphase-promoting complex couples mitosis to S-phase entry. Nature 432, 588-595. [*News and Views* in Nature, Nature Reviews Molecular and Cell Biology]

Rape, M., Hoppe, T., Gorr, I., Kalocay, M., Richly, H., and Jentsch, S. (2001). Mobilization of processed, membrane-tethered SPT23 transcription factor by CDC48. Cell 107, 667-677.

BIOTECHNOLOGY EXPERIENCE

2012 Co-founder, Nurix (San Francisco)
This company focuses on the discovery of small molecule agonists and antagonists of ubiquitin ligases