

## **Curriculum Vitae René Bernards.**

### **Personal**

Date of birth: January 4, 1953, Bussum, the Netherlands  
Citizenship: The Netherlands  
Marital Status: Married, two children (1994, 1997)  
Work address: Division of Molecular Carcinogenesis  
The Netherlands Cancer Institute  
Plesmanlaan 121, 1066 CX Amsterdam, The Netherlands  
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### **Education**

1972 - 1976: B.Sc. University of Amsterdam, medical biology  
1976 - 1980: M.Sc. University of Amsterdam (cum laude)  
1980 - 1984: Ph.D. University of Leiden (cum laude)  
Thesis title: Transformation and oncogenicity by human adenoviruses.  
Alex van der Eb, thesis advisor.

### **Postdoctoral training**

1985 - 1988 Postdoctoral fellow, Whitehead Institute for Biomedical Research,  
Cambridge, MA, USA. Robert Weinberg, advisor.

### **Positions held**

1988 - 1994 Assistant Professor, Harvard University.  
1992 - present: Head, Division of Molecular Carcinogenesis, Netherlands Cancer  
Institute, Amsterdam.  
1994 - present Professor of Molecular Carcinogenesis University of Utrecht (part  
time).  
2003 - present Founder and Chief Scientific Officer, Agendia BV, Amsterdam, The  
Netherlands (part time).

### **Professional Societies**

Member: European Molecular Biology Organization (EMBO).  
American Association for the Advancement of Science  
American Association for Cancer Research  
American Society for Biochemistry and Molecular Biology  
Netherlands Foundation for Biochemistry and Molecular Biology  
Center for Biomedical Genetics.  
Cancer Genomics Center.  
Royal Dutch Academy of Arts and Sciences.

### **Honors and Awards**

1985: Constantijn and Christiaan Huygens Fellowship, Netherlands  
Organization for Scientific Research.  
1988: Edward Mallinckrodt Foundation award.  
1989: Searle Scholarship award.  
1992: Pionier Award, Netherlands Organization for Scientific Research.

- 2004: Josephine Nefkens award, Erasmus University, Rotterdam.  
 2005: 2005 Pezcoller Foundation-FECS Recognition for Contribution to Oncology.  
 2005: Member, Academia Europea.  
 2005: Spinoza award, Netherlands Organization for Scientific Research.  
 2005: Ernst W. Bertner Award for Cancer Research, M.D. Anderson Cancer Center.  
 2007: Member, Royal Netherlands Academy of Arts and Sciences.  
 2007: ESMO Lifetime Achievement Award in Translational Research in Breast Cancer.  
 2009 Fellow, European Academy of Cancer Sciences.

### **Advisory Boards and consultancies**

- 1996 - 2003 Member, Scientific board of the Dutch Cancer Society.  
 1996 - present Member, Scientific Advisory Board, TopoTarget Ltd, UK.  
 1999 - 2002 Consultant, Galapagos Genomics, Leiden, Netherlands.  
 2002 – present Scientific Advisory Committee, Breakthrough Breast Cancer charity, London, UK.  
 2003 - present Consultant, Aveo Pharmaceuticals, Cambridge MA, USA.  
 2004 – 2006 General Motors Cancer Research Foundation Awards Assembly.  
 2005- present Scientific Advisory Board, Gilde Healthcare fund.  
 2009 – present AACR Laboratory Research Awards Selection Committee  
 2009 – present Member International Scientific Advisory Board, Institut Gustav Roussy, Villejuif, France.

### **Research Interests**

Cancer genetics and cancer biology.

### **Selection of major invited lectures at international meetings (last five years)**

- 2005 Keystone symposium “Molecular Targets for Cancer Therapy”, Santa Fe, USA.  
 2005 ISREC conference “Cell and molecular biology of cancer” Lausanne, Switzerland.  
 2005 AACR Oncogenomics 2005: Dissecting Cancer through Genome Research San Diego, USA.  
 2005 Keystone symposium “Ubiquitin and Signaling”, Taos New Mexico, USA.  
 2005 Sackler lecture, Whitehead Institute, Cambridge, USA.  
 2005 Keystone symposium “Cellular senescence and cell death” Keystone, USA.  
 2005 70<sup>th</sup> Cold Spring Harbor Symposium on Quantitative Biology “Molecular Approaches to Controlling Cancer”, Cold Spring Harbor, USA.  
 2004 Keystone symposium “Stem cells, Senescence and Cancer”, Singapore.  
 2004 AACR conference “Advances in breast cancer research”, La Jolla, USA (keynote lecture).  
 2006 AACR conference “Ubiquitin and Cancer”, Lake Buena Vista, Florida, USA.  
 2006 Keystone conference “RNAi and related pathways”, Vancouver, Canada  
 2006 Keystone conference “signaling networks”, Vancouver, Canada.  
 2006 97<sup>th</sup> AACR annual conference, Washington, USA.  
 2006 Royal Society of Edinburgh symposium “Beyond the human genome”, Edinburgh, UK.  
 2006 71<sup>st</sup> Cold Spring Harbor Symposium on Quantitative Biology “Regulatory RNAs”, Cold Spring Harbor, USA.  
 2006 The BACR lecture, EMBO conference “Mammary gland development and breast

- cancer progression”, Dublin, Ireland.
- 2006 European Association for Cancer Research 19<sup>th</sup> meeting, Budapest, Hungary.
- 2006 RNAi Europe, Prague, Czech Republic (keynote lecture).
- 2006 ISREC conference “Cell and molecular Biology of Cancer”, Lausanne, Switzerland.
- 2006 EMBL/EMBO symposium “From functional genomics to Systems Biology”, Heidelberg, Germany.
- 2006 AACR conference “Emerging molecular concepts in oncology”, Shanghai, China.
- 2006 CNIO conference “Molecular Markers in Cancer Therapy”, Madrid, Spain (keynote lecture).
- 2007 AACR Oncogenomics, Phoenix, USA.
- 2007 Keystone symposium “Ubiquitin” Big Sky, Montana, USA.
- 2007 98<sup>th</sup> annual AACR conference, Los Angeles, USA
- 2007 ASCO conference, Chicago, USA
- 2007 Gordon conference “cancer, models and mechanisms”, Les Diablerets, Switzerland
- 2007 AACR conference “molecular diagnostics in cancer therapeutic development”, Atlanta, USA.
- 2007 ECCO14, Barcelona, Spain.
- 2007 AACR conference “Molecular targets and cancer therapeutics, San Francisco, USA.
- 2007 AACR conference “the role of non-coding RNAs in cancer”, Cambridge MA, USA.
- 2007 San Antonio breast cancer conference, San Antonio, USA.
- 2008 Keystone conference “cancer genomics and epigenomics”, Taos, New Mexico, USA.
- 2008 Genomes to Systems conference 2008, Manchester UK.
- 2008 European breast cancer conference, Berlin, Germany.
- 2008 Gordon conference “cancer models and mechanisms, Bryant college, USA.
- 2008 33<sup>rd</sup> ESMO conference Stockholm, Sweden (keynote lecture).
- 2008 CAMS-MRL joint symposium “Emerging molecular concepts in oncology. Beijing, PR China.
- 2008 20<sup>th</sup> EORTC-NCI-AACR symposium Molecular Targets and Cancer Therapeutics, Geneva, Switzerland.
- 2008 CBG/CGC conference Molecular Mechanisms and Mouse Models in Cancer, Amsterdam, The Netherlands.
- 2009 European Science Foundation consensus conference “RNA world: a new frontier in biomedical research. Grenada, Spain.
- 2009 Fourth annual Oxford RNAi conference, Oxford UK (keynote lecture).
- 2009 15<sup>th</sup> Lilly foundation symposium “molecular markers in cancer therapy”. El Escorial, Spain.
- 2009 Croucher Institute conference on Cancer Biomarkers, Hong Kong.
- 2009 Centennial AACR annual conference, Denver Colorado
- 2009 IMPAKT breast cancer conference, Brussels, Belgium
- 2009 Days of Molecular Medicine “The future of individualized medicine”, Boston USA.
- 2009 Institute of Cancer Research Centenary Conference, London UK.
- 2009 Keystone conference “Deregulation of transcription in cancer” Killarney, Ireland.
- 2009 Worldwide innovation networking in personalized medicine, Paris, France.
- 2009 ECCO15, Berlin Germany.
- 2009 AACR/NCI/EORTC conference “Molecular targets and cancer therapeutics”, Boston, USA.
- 2010 22<sup>nd</sup> Lorne Cancer Conference, Australia.
- 2010 New York Academy of Science conference “Towards Personalized cancer medicine”, Barcelona, Spain.
- 2010 AACR translational cancer medicine 2010, Amsterdam, the Netherlands (Keynote lecture).
- 2010 2<sup>nd</sup> EMBO conference on Cellular Signaling and Molecular Medicine. Dubrovnik,

Croatia.

- 2010 Gordon Conference on Mammary Gland Development, Il Ciocco, Italy.
- 2010 Pezcoller Symposium, RNA biology and cancer, Trento, Italy.
- 2010 12<sup>th</sup> European workshop on cytogenetics and molecular genetics of solid tumors, Nijmegen, the Netherlands.

### **Meetings Organized**

- 2000 "DNA Microarray Technology in Biomedical Research", Amsterdam, The Netherlands.
- 2001 "Cancer and the Cell Cycle", Amsterdam, The Netherlands.
- 2004 "Functional genomics", Amsterdam, The Netherlands.
- 2005 Gordon Research Conference on "Cancer, Models and Mechanisms", Smithfield RI, USA (vice-chair).
- 2005 96<sup>th</sup> AACR annual conference Anaheim, USA, workshop on RNAi.
- 2006 Keystone conference "signaling networks", Vancouver, Canada.
- 2006 Gordon Research Conference on "Cancer, Models and Mechanisms", Smithfield RI, USA (chair).
- 2007 "The role of non-coding RNAs in Cancer", AACR special conference, Cambridge, USA.
- 2009 37th congress of the international society of oncology and biomarkers, Amsterdam, the Netherlands.
- 2009 ECCO15, Berlin, scientific program director.
- 2010 101<sup>st</sup> AACR Annual conference Washington, Program committee member
- 2010 22<sup>nd</sup> Pezcoller Symposium "RNA Biology and Cancer", Trento, Italy.

### **Present laboratory staff.**

Katrien Berns PhD	Associate staff scientist
Annette Dirac PhD	Post-doc
Michael Hölzel MD, PhD	Post-doc
Sidong Huang PhD	Post-doc
Prasanth Kumar PhD	Post-doc
Michiel van der Heijden MD, PhD	Post-doc
Ian Majewski PhD	Post-doc
Jasper Mullenders PhD	Post-doc
Rianne Oosterkamp MD	Clinical fellow
Ernst Geutjes MSc.	Graduate Student
Guus Heynen MSc	Graduate Student
Marielle Hijmans MSc	Technical staff
Franciska Manuputty	Secretary

### **Past Ph.D. students Bernards laboratory 1993-2006**

- Roderick Beijersbergen, 1995  
*Currently junior staff scientist at the Netherlands Cancer Institute.*
- Guus Hateboer, 1995  
*Currently at KIADIS pharma, Amsterdam, The Netherlands.*
- Mathijs Voorhoeve, 1999  
*Currently assistant professor at Duke-NUS, Singapore.*
- Katrien Berns, 2000  
*Currently staff scientist at the Netherlands Cancer Institute*
- Hans Masselink, 2001

*Currently in patent law at Novartis after acquiring MBA*  
 Thijn Brummelkamp, 2003  
*Currently fellow at the Whitehead Institute*  
 Sebastian Nijman, 2005  
*Currently Principal Investigator at the Research Center for Molecular Medicine in Vienna, Austria.*  
 Menno Creyghton, 2006  
*Currently post doc at the Whitehead Institute, Cambridge, USA*  
 Roderik Kortlever, 2008  
*Currently post doc at UCSF, San Francisco, USA.*  
 Mirjam Epping, 2008  
*Currently post doc at Harvard University*

### **Past post docs Bernards laboratory 1993-2006.**

Laura van 't Veer  
*Currently head, familial cancer clinic, The Netherlands Cancer Institute and Chief operating officer, Agendia BV.*  
 Ron Kerkhoven  
*Currently head, DNA microarray facility, The Netherlands Cancer Institute*  
 Marc Billaud  
*Currently, staff scientist International Agency on Cancer, Lyon France.*  
 Nancy Walworth  
*Currently Associate Professor, Rutgers Medical School, Piscataway, New Jersey, USA.*  
 Avi Shvarts  
*Currently assistant professor, Utrecht University, The Netherlands.*  
 Renate Zwijsen,  
*Currently staff scientist, Nutricia Research, The Netherlands.*  
 Daniel Peeper  
*Currently staff scientist, The Netherlands Cancer Institute and Professor of Functional oncogenomics, Free University, Amsterdam.*  
 Blanca Scheijen  
*Currently post doctoral fellow, Nijmegen University, The Netherlands.*  
 Liming Wang  
*Currently, head of urology unit, Changzheng hospital, Shanghai, China.*  
 Michael Edel  
*Currently post doc in Barcelona, Spain.*  
 Reuven Agami  
*Currently staff scientist, The Netherlands Cancer Institute and professor of MicroRNA and pathogenesis at Erasmus University Rotterdam.*  
 Pieter Eichhorn  
*Currently post doc in Barcelona, Spain.*  
 Luis Borlado  
*Currently post doc in Madrid, Spain.*  
 Linda Smit  
*Currently staff scientist, Free University Amsterdam*

### **Patent filings**

- [1]. "Recombinant pox virus for immunization with tumor-associated antigens. US, granted. Granted US, 6699475
- [2] "Transcription factor E2F-4." filed 15<sup>th</sup> Nov. 1994  
 US granted, US6045999.
- [3] "Transcription factor E2F-5." filed 14<sup>th</sup> Feb. 1995.

US granted US20030022260A1. Australia granted

- [4] "Adenovirus E1A-associated protein BS69, inhibitor of E1A transactivation" filed 14<sup>th</sup> Jun. 1995.  
US granted US5985283.
- [5] "Interaction of cyclin D1 and the estrogen receptor and its use in assays" filed 19<sup>th</sup> Apr. 1996.  
US granted US6033843. Europe granted.
- [6] "E2F ubiquitination domain and assays for inhibition and enhances of E2F ubiquitination." filed 23<sup>rd</sup> Aug. 1996. US granted US6368809.
- [7] "Interaction between cyclin D1 and steroid receptor coactivators and uses thereof in assays." filed 12<sup>th</sup> Feb. 1998. US granted: US20020177177A1.
- [8] "Assays for cell cycle modulators based on the modulation of cyclin D1 degradation in response to ionising radiation." filed 12<sup>th</sup> May 2000. CA2409717AA.
- [9] "Assays for modulators of the cell cycle." (DRIL-1) filed 18<sup>th</sup> Jan. 2001.
- [10] "The role of BCL6 in immortalization and senescence". GB0206086-1. Filed by CRT, January 2002.
- [11]. "Adenoviral library assay assay for E2F regulatory methods and compositions for screening compounds". US20030166167A1. Filed, April 2001.
- [12]. "Diagnosis and Prognosis of breast cancer patients", granted US patent 7,514,209
- [13] METHODS OF ASSIGNING TREATMENT TO BREAST CANCER PATIENTS. US patent (US 7,171,311
- [13] "RNA interference" WO 03056012, US granted.
- [14]. "Therapeutic methods" GB 0301124.4, covers a number of DUB enzymes, filed 17/1/03 by Prolifix/Topotarget, Ltd.
- [15] "New use for cancer antigen". Filed, 2004.
- [16] "Involvement of lipid kinase, and signal transduction pathway comprising said lipid kinase, in resistance to HER2-targeting therapy". Filed April 2007.

#### **Active grant support.**

"Center for Biomedical Genetics", PI: Rene Bernards. Agency: Netherlands Organization for Scientific Research (NWO), bonus incentive scheme. Period: 2009-2013. Unrestricted funding.

*Annual budget: \$250,000*

"Center for Cancer Genomics", PI: Rene Bernards, Agency: Netherlands Genomics Initiative. Period: 2008-2012. The major goal of this project is to construct a shRNA library and use it is loss of function genetic screens.

*Annual budget: \$435,000*

“SPINOZA” premium, PI: Rene Bernards. Agency: Netherlands Organization for Scientific Research (NWO), Period: 2006-2010. Unrestricted grant.

*Annual budget \$ 360,000*

“Kinases in cancer”, PI: Rene Bernards. Agency: TI Pharma. Period: 2006-2010. The major goal of this project is to identify kinases whose inactivation is synthetic lethal with loss of major tumor suppressor pathways in human cancer.

*Annual budget: \$ 150,000*

“RUBICON”. PI: Rene Bernards; Agency: European Union (FP6); Period: 2006-2010. The major goal of this project is to identify DUB enzymes in cancer-relevant pathways.

*Annual budget: \$125,000.*

“Identification of enzymes involved in regulatory ubiquitination in TNF $\alpha$ -stimulated signalling by loss of function genetic screens”. PIs: A. Dirac and R. Bernards; Agency: Dutch Cancer Society (NKI 2008-4042). The major goal of this project is to identify novel enzymes that act in regulatory ubiquitination in the TNF-alpha signalling cascade.

*Annual budget: \$ 170,000*

“Understanding resistance to HER2-targeting therapy in human breast cancer through functional genetics”. PIs: Dr. K. Berns, MJ. Van de Vijver, R. Bernards. Agency: Dutch Cancer Society (NKI2008-4047). The major goal of this project is to identify mechanisms of resistance to HER2 targeted therapies in breast cancer.

*Annual budget: \$ 170,000.*

“Identification of genetic modifiers of sensitivity to mTOR pathway inhibition in breast cancer”. PIs: R. Bernards, M. S. Van der Heijden, M. Holzel. Agency: Dutch Cancer Society (NKI2009-4437). The major goal of this project is to identify mechanisms of resistance to mTOR targeted therapies in breast cancer.

*Annual budget: \$ 170,000.*

“Dissecting functional dependencies in cancer”. PI: R. Bernards. Agency: European Research Council (ERC-250043). The major goal of this project is to identify biomarkers and mechanisms of resistance to targeted therapies in cancer and to find synthetic lethal interactions with cancer-specific genetic lesions.