

Curriculum Vitae

Benjamin T. Spike

Born: March 26, 1974
Birthplace: Owosso, Michigan, USA
Languages Spoken: English and German
Email: bspike@salk.edu

EDUCATION:

Ph.D. in Cancer Biology (2007)
University of Chicago
Department of Biomedical Sciences
Committee on Cancer Biology
Chicago, Illinois 60615

Thesis title: The Retinoblastoma
Tumor Suppressor in Stress
Erythropoiesis

Committee:
Wei Du
Steve Kron
Michelle LeBeau
Harinder Singh
Kay F. Macleod (Advisor)

Master of Science in Cell Biology (1999)
University of California, San Diego/
The Salk Institute for Biological Studies
La Jolla, California 92093

Thesis title: Characterization of
the DNA Damage Response in
Mouse Embryonic Stem Cells

Committee:
Cornelis Murre
Deborah Spector
Geoffrey M. Wahl (Advisor)

Bachelor of Science in Molecular Biology (1997)
University of California, San Diego
La Jolla, California 92093

Bachelor of Arts in Modern European History (1997)
University of California, San Diego
La Jolla, California 92093

NON-DEGREE EDUCATION:

Free University of Berlin (medicine)
Berlin, Germany
October 1998—November 1999

Research in cancer diagnostics
and beginning studies in French
and Russian Linguistics

Georg-August University (academic exchange)
Goettingen, Germany
August 1994--June 1995

Molecular Biology, German
Linguistics, Music, and
Mediaeval/Modern European
History

RESEARCH EXPERIENCE:

Postdoctoral Fellow

Aug 2007 – Present

Laboratory of Geoffrey M. Wahl, Ph.D.
The Salk Institute for Biological Studies
Gene Expression Laboratory
La Jolla, California 92093-1099

Research: Development of molecular and genetic strategies to characterize mammary and cancer stem cells.

Graduate Student

July 2002 – Aug 2007

Laboratory of Kay F. Macleod, Ph.D.
University of Chicago/Ben May
Institute for Cancer Research
924 E. 57th Street
Chicago, IL 60637

Research: Use of mouse models and molecular genetics to understand the function and control of the Rb tumor suppressor in hematopoietic homeostasis and leukemogenesis, and regulation of the Rb pathway by oxidative stress

Research Technician

May 2001 -- September 2001

Laboratory of Elaine Fuchs, Ph.D.
University of Chicago/ HHMI

Current address:
The Rockefeller University
1230 York Avenue Box #300
New York, NY 10021

Research: Preparation of molecular genetic tools for the study of cytoskeletal-associated proteins and their involvement in transcriptional regulation, cell fate determination, cellular migration, organogenesis and tissue homeostasis.

Research Technician

December 1999--May 2001

Laboratory of Anne H. Rowley, M.D.
Northwestern University Medical School
Department of Pediatric Research
303 E. Chicago Ave.
Chicago, IL 60611

Research: Molecular studies toward discovery of the causative agent in Kawasaki syndrome.

Student Research Associate

October 1998--November 1999

Laboratory of Prof. Dr. Ulrich Keilholz
University Hospital Benjamin Franklin
Medical Clinic III, Hematology, Oncology
and Transfusion Medicine
Hindenburgdamm 30
12200 Berlin, Germany

Research: Development of internal standards that control for RNA isolation, cDNA synthesis, and PCR efficiency in the detection of tumor cells in peripheral blood using nested, quantitative, real-time RT-PCR.

Masters Student

June 1996--October 1998

Laboratory of Geoffrey M. Wahl, Ph.D.
The Salk Institute for Biological Studies
Gene Expression Laboratory
10010 N. Torrey Pines Rd.
La Jolla, California 92037-1099

Research: Studies on cell cycle control, DNA damage and anti-metabolite induced arrest and apoptosis in mouse embryo stem cells and their in vitro-differentiated counterparts.

Laboratory Assistant

Summer 1993

Parasitology Department
Eli Lilly and Company
Lilly Research Labs
Greenfield, Indiana

Duties: Screens for potential "endectocides" (insectocides/endoparasitide).

TEACHING EXPERIENCE:**University of Chicago Teaching Assistant**

January 2004 --March 2004

University of Chicago
Chicago, Illinois 60637

Duties: Lecture, create exam questions, grade exams, lead weekly scientific article critique, organize and conduct exam preparation sessions for:
Biology of Cancer -- Profs. Marsha Rosner, Kay Macleod and Piers Nash

University of Chicago Teaching Assistant

January 2003 --March 2003

University of Chicago
Chicago, Illinois 60637

Duties: Create exam questions, grade exams, lead weekly scientific article critique, organize and conduct exam preparation sessions for:
Fundamentals of Molecular Biology -- Profs. Ursula Storb and Jonathan P. Staley

Private Tutor

1992-2007

Duties: "One-on-one" instruction in German language, mathematics, biology, saxophone, and writing for high school and college students.

UCSD Teaching Assistant

September 1997--December 1997

University of California, San Diego
La Jolla, California 92093

Duties: Create exam questions, grade exams, give two weekly supplementary lectures, organize and conduct exam preparation sessions for:

Genetics -- Prof. William McGinnis**UCSD Teaching Assistant**

April 1997--June 1997

University of California, San Diego
La Jolla, California 92093

Duties: Grade exams, give weekly supplementary lectures, organize and conduct exam preparation sessions for:

Cancer Biology: Prof. Cornelis Murre**PUBLICATIONS:**

Alexandra Dirlam , **Benjamin T. Spike**, Kay F. Macleod. Deregulated E2f-2 underlies cell cycle and maturation defects in Rb null erythroblasts. Mol Cell Biol. Epub Oct 8, 2007

Benjamin T. Spike and Kay F. Macleod Effects of Hypoxia on Heterotypic Macrophage Interactions (2007) Cell Cycle 6(21): 2620-2624

Kristin Tracy, Benjamin C. Dibling, **Benjamin T. Spike**, James R. Knabb, Paul Schumacker, and Kay F. Macleod. BNIP3 is an RB/E2F target gene required for hypoxia-induced autophagy. (2007) Mol Cell Biol. 27(17):6229-42.

Benjamin T. Spike, Benjamin C. Dibling, and Kay F. Macleod. Hypoxic stress underlies defects in erythroblast islands in the Rb-null mouse. (2007) Blood 110(6):2173-81.

Abhinav Diwan, Andrew G. Koesters, Amy M. Odley, Suvarnamala Pushkaran, Christopher P. Baines, **Benjamin T. Spike**, Diedre Daria, Anil G. Jegga, Hartmut Geiger, Bruce J. Aronow, Jeffery D. Molkentin, Kay F. Macleod, Theodosia A. Kalfa, and Gerald W. Dorn, II. Unrestrained erythroblast development in Nix-/- mice reveals a mechanism for apoptotic modulation of erythropoiesis. (2007)Proc Natl Acad Sci U S A. 104(16):6794-9.

Benjamin T. Spike and Kay F. Macleod. The Rb Tumor suppressor in stress responses and hematopoietic homeostasis. (2005) Cell Cycle, 4(1):42-45

Benjamin T. Spike, Alexandra Dirlam, Benjamin C. Dibling, James Marvin, Bart O. Williams, Tyler Jacks and Kay F Macleod. The Rb tumor suppressor is required for stress erythropoiesis. (2004) The EMBO Journal 23(21):4319-29

Huiping Liu, Benjamin Dibling, **Benjamin Spike**, Alexandra Dirlam and Kay Macleod. New roles for the RB tumor suppressor protein (2004) Current Opinion in Genetics & Development 14(1):55-64

Anne H. Rowley, **Benjamin T. Spike**, Carrie A. Mask, Stanford T. Shulman and Susan C. Baker. Oligoclonal IgA response in the vascular wall in acute Kawasaki Disease. (2001) Journal of Immunology 166(2):1334-1343

Nicole Max, Karin Wolf, **Benjamin Spike**, Eckhard Theil and Ulrich Keilholz. Nested quantitative real time PCR for detection of occult tumor cells. (2001) *Recent Results in Cancer Research* 158: 25-31

Ulrich Keilholz, Nicole Max, **Benjamin Spike** and Martina Willhauk. PCR-based detection of malignant cells: Towards molecular staging? Chapter 1. *Strategies in Adjuvant Therapy*. ed. John M. Kirkwood, (London, 2000; Martin Dunitz Ltd.) pp.1-18.

Mirit I. Aladjem, **Benjamin T. Spike**, Luo Wei Rodewald, Thomas J. Hope, Martina Klemm, Rudolf Jaenisch and Geoffrey M. Wahl. ES cells do not activate p53-dependent stress responses and undergo p53-independent apoptosis in response to DNA damage. (1998) *Current Biology* 8: 145-155. (COVER PICTURE)

ABSTRACTS:

Poster: Alexandra Dirlam, **Benjamin T. Spike**, & Kay Macleod. *E2F-2 promotes erythroid maturation in response to oxidative stress* Keystone Symposium: Cellular Senescence and Cell Death, Keystone, Colorado (March 3-9, 2005)

Poster: Kristin Tracy, Benjamin Dibling, **Benjamin T. Spike**, & Kay Macleod. *The Rb tumor suppressor protects from hypoxia-induced necrosis through repression of BNip3*. Keystone Symposium: Cellular Senescence and Cell Death, Keystone, Colorado (March 3-9, 2005)

Talk: **Benjamin Spike**, Alexandra Dirlam, Benjamin Dibling & Kay Macleod. *Critical functions of the Rb tumor suppressor in stress erythropoiesis*. Cancer Genetics & Tumor Suppressor Genes, Cold Spring Harbor, New York (August 18-22, 2004)

Poster: Nicole Max, Karin Wolf, Heiko Wittor, **Benjamin T. Spike**, Thomas Burmeister, Eckhard Thiel and Ulrich Keilholz. *Rapid real-time quantification of bcr-abl transcripts: inter- and intra-assay variation of a novel RT-PCR assay*. Annual Meeting of the Association for Molecular Pathology (AMP), St.Louis, MO. (November 5-7, 1999)

Poster: **Benjamin T. Spike**, Nicole Max, Eckhard Thiel, and Ulrich Keilholz. *Quantitative real-time RT-PCR for detection of bcr-abl transcripts covering a range of 1-10⁷ cells/ml blood*. (1999) *Onkologie* 22 (supl. 1):p.74 (German)

Poster: Nicole Max, **Ben Spike**, Karin Wolf, Eckhard Thiel, and Ulrich Keilholz. *Establishment of a nested quantitative real-time PCR: Implications for detection of minimal residual disease*. (1999) *Onkologie* 22 (suppl1):p.68 (German)

Poster: Geoffrey M. Wahl, Mirit I. Aladjem, Jayne Stommel, **Benjamin Spike**, Luo Wei Rodewald, Gretchen Jimenez, Joseph Noel, and Thomas Hope. *Mechanisms contributing to the control of p53 function* (9th p53 Workshop, Crete/Greece, May 9-13, 1998.) p.36

HONORS and SUPPORT:

Elaine Ehrman Fellowship 2005-2006

Best student talk University of Chicago, Biomedical Sciences Retreat 2005

NIH Graduate Student Training Grant, University of Chicago 2001-2004

University Hospital Benjamin Franklin, FU Berlin Research Fellowship 1998-1999

UCSD Graduate Student Research Grant 1997-1998

UCSD Regents Scholar 1992-1997

UCSD Deans List 1996,1997

AP Scholar of Distinction 1992

Appointment to West Point 1992

Appointment to the United States Naval Academy 1992

Marine Corp Academic Promise Award 1992