

CURRICULUM VITAE

Bertram L. Jacobs
School of Life Sciences
Center for Infectious Diseases and Vaccinology, The Biodesign Institute
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EDUCATION

Ph. D., Biochemistry, June, 1981
University of California, Berkeley
Dissertation advisor: E.E. Penhoet
Dissertation title: "The mechanism of assembly of vesicular stomatitis virus."

B.S., Biology, June, 1974
Rutgers University

PROFESSIONAL EXPERIENCE

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| 8/96-present | Professor School of Life Sciences/Center for Infectious Disease and Vaccinology, the Biodesign Institute Arizona State University |
| 8/08-8/11 | Leader, Faculty of Biomedicine and Biotechnology, School of Life Sciences Arizona State University |
| 7/00-6/01 | Distinguished Visiting Professor Centro Nacional Biotechnologia, Madrid, Spain Aventis, Pasteur, Toronto, Canada Department of Microbiology and Molecular Genetics University of Florida |
| 8/96-7/00 | Director, Graduate Degree Program in Molecular and Cellular Biology Arizona State University |
| 8/90-8/96 | Associate Professor Department of Microbiology Arizona State University |

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| 6/91-1/92 | Visiting Associate Research Professor Molecular Mechanisms of Carcinogenesis Laboratory Human Retrovirus Section National Cancer Institute Frederick Cancer Research Facility |
| 8/85-3/90 | Assistant Professor Department of Microbiology Arizona State University |
| 6/84-8/85 | Post-Doctoral Research Associate Department of Biological Sciences Section of Biochemistry and Molecular Biology University of California, Santa Barbara |
| 1/81-6/84 | Lecturer (50% time)/Post-Doctoral Research Associate (50% time) Department of Biological Sciences Section of Biochemistry and Molecular Biology University of California, Santa Barbara |
| 9/75-1/81 | NIH Pre-Doctoral Fellow Department of Biochemistry University of California, Berkeley |
| 8/74-8/75 | Research Assistant Department of Pathology Cornell University Medical College |

SELECTED PUBLICATIONS (of 74)

- Jacobs, B.L. (2000). **Translational Control in Poxvirus-infected Cells**. In, *Translational Control of Gene Expression*, CSHL Press, 2000.
- Kibler KV, Miyazato A, Yedavalli VS, Dayton AI, Jacobs BL, Dapolito G, Kim SJ, Jeang KT: **Polyarginine inhibits gp160 processing by furin and suppresses productive human immunodeficiency virus type 1 infection**. *J Biol Chem* 2004, **279**:49055-49063.
- Langland JO, Jacobs BL: **Inhibition of PKR by vaccinia virus: role of the N- and C-terminal domains of E3L**. *Virology* 2004, **324**:419-429.
- Brandt T, Heck MC, Vijaysri S, Jentarra GM, Cameron JM, Jacobs BL: **The N-terminal domain of the vaccinia virus E3L-protein is required for neurovirulence, but not induction of a protective immune response**. *Virology* 2005, **333**:263-270.
- Jancovich JK, Davidson EW, Parameswaran N, Mao J, Chinchar VG, Collins JP, Jacobs BL, Storfer A: **Evidence for emergence of an amphibian iridoviral disease because of human-enhanced spread**. *Mol Ecol* 2005, **14**:213-224.

- Langland JO, Cameron JM, Heck MC, Jancovich JK, Jacobs BL: **Inhibition of PKR by RNA and DNA viruses.** *Virus Res* 2006, **119**:100-110.
- Langland JO, Kash JC, Carter V, Thomas MJ, Katze MG, Jacobs BL: **Suppression of proinflammatory signal transduction and gene expression by the dual nucleic acid binding domains of the vaccinia virus E3L proteins.** *J Virol* 2006, **80**:10083-10095.
- Ye Y, Hauns K, Langland JO, Jacobs BL, Hogue BG: **Mouse hepatitis coronavirus A59 nucleocapsid protein is a type I interferon antagonist.** *J Virol* 2007, **81**:2554-2563.
- Vijaysri S, Jentarra G, Heck MC, Mercer AA, McInnes CJ, Jacobs BL: **Vaccinia viruses with mutations in the E3L gene as potential replication-competent, attenuated vaccines: Intra-nasal vaccination.** *Vaccine* 2008, **26**:664-676.
- Zhang P, Jacobs BL, Samuel CE: **Loss of protein kinase PKR expression in human HeLa cells complements the vaccinia virus E3L deletion mutant phenotype by restoration of viral protein synthesis.** *J Virol* 2008, **82**:840-848.
- Jacobs, B. L., Langland, J. O., Kibler, K. V., Denzler, K. L., White, S. D., Holechek, S. A., Wong, S., Huynh, T., Baskin, C. R. (2009). **Vaccinia virus vaccines: past, present and future.** *Antiviral Res* **84**(1), 1-13. PMID: 19563829
- Zhang, P., Langland, J. O., Jacobs, B. L., and Samuel, C. E. (2009). **Protein kinase PKR-dependent activation of mitogen-activated protein kinases occurs through mitochondrial adapter IPS-1 and is antagonized by vaccinia virus E3L.** *J Virol* **83**(11), 5718-25. PMID: 19321614.
- Denzler, K. L., T. Babas, A. Rippeon, T. Huynh, N. Fukushima, L. Rhodes, P. M. Silvera, and B. L. Jacobs. **2011. Attenuated NYCBH vaccinia virus deleted for the E3L gene confers partial protection against lethal monkeypox virus disease in cynomolgus macaques.** *Vaccine* **29**:9684-90.
- Denzler, K. L., A. D. Rice, A. L. MacNeill, N. Fukushima, S. F. Lindsey, G. Wallace, A. M. Burrage, A. J. Smith, B. R. Manning, D. M. Swetnam, S. A. Gray, R. W. Moyer, and B. L. Jacobs. **2011. The NYCBH vaccinia virus deleted for the innate immune evasion gene, E3L, protects rabbits against lethal challenge by rabbitpox virus.** *Vaccine* **29**:7659-69.
- Denzler, K. L., J. Schriewer, S. Parker, C. Werner, H. Hartzler, E. Hembrador, T. Huynh, S. Holechek, R. M. Buller, and B. L. Jacobs. **2011. The attenuated NYCBH vaccinia virus deleted for the immune evasion gene, E3L, completely protects mice against heterologous challenge with ectromelia virus.** *Vaccine* **29**:9691-6.
- Denzler, K. L., R. Waters, B. L. Jacobs, Y. Rochon, and J. O. Langland. **2011. Regulation of inflammatory gene expression in PBMCs by immunostimulatory botanicals.** *PLoS One* **5**:e12561.
- Kibler, K. V., C. E. Gomez, B. Perdiguero, S. Wong, T. Huynh, S. Holechek, W. Arndt, V. Jimenez, R. Gonzalez-Sanz, K. Denzler, E. K. Haddad, R. Wagner, R. P. Sekaly, J. Tartaglia, G. Pantaleo, B. L. Jacobs, and M. Esteban. **2011. Improved NYVAC-based vaccine vectors.** *PLoS One* **6**:e25674.
- Quakkelaar, E. D., A. Redeker, E. K. Haddad, A. Harari, S. M. McCaughey, T. Duhon, A. Filali-Mouhim, J. P. Goulet, N. M. Loof, F. Ossendorp, B. Perdiguero, P. Heinen, C. E. Gomez,

- K. V. Kibler, D. M. Koelle, R. P. Sekaly, F. Sallusto, A. Lanzavecchia, G. Pantaleo, M. Esteban, J. Tartaglia, B. L. Jacobs, and C. J. Melief. **2011. Improved Innate and Adaptive Immunostimulation by Genetically Modified HIV-1 Protein Expressing NYVAC Vectors. PLoS One 6:e16819.**
- White, S. D., K. Conwell, J. O. Langland, and B. L. Jacobs. **2011. Use of a negative selectable marker for rapid selection of recombinant vaccinia virus. Biotechniques 50:303-9.**
- Arndt, W., C. Mitnik, K. L. Denzler, S. White, R. Waters, B. L. Jacobs, Y. Rochon, V. A. Olson, I. K. Damon, and J. O. Langland. **2012. In vitro characterization of a nineteenth-century therapy for smallpox. PloS one 7:e32610.**
- Holechek, S. A., K. L. Denzler, M. C. Heck, J. Schriewer, R. M. Buller, F. A. Legrand, P. H. Verardi, L. A. Jones, T. Yilma, and B. L. Jacobs. **2013. Use of a recombinant vaccinia virus expressing interferon gamma for post-exposure protection against vaccinia and ectromelia viruses. PloS one 8:e77879**
- Wellensiek, B. P., A. C. Larsen, J. Flores, B. L. Jacobs, and J. C. Chaput. **2013. A leader sequence capable of enhancing RNA expression and protein synthesis in mammalian cells. Protein science : a publication of the Protein Society 22:1392-1398.**

ASSOCIATIONS

American Society for Virology
 American Society for Microbiology
 American Association for the Advancement of Science

HONORS, EDITORIAL BOARDS, PROPOSAL REVIEW, etc.

Interim Director, ASU School of Life Sciences, 2014-
 Member, Scientific Advisory Board, Hu HIV Vaccine Discovery Consortium, 2013-present
 Member, Board of Directors, HEAL International, 2007-present
 Member, Board of Directors, Aunt Rita's Foundation, 2011-present
 Member, Board of Advisors, Aviratek, 2013-present
 Faculty Leader, School of Life Sciences Faculty in Biomedicine and Biotechnology, 2008-2012
 Fulbright Specialist Awardee, 2011
 Distinguished Nominee, ASU Parent's Association Professor of the Year, 2011
 Organizer, XVIII International Poxvirus, Asfivirus and Iridovirus Symposium, 2010
 Chair, ASU Institutional Biosafety Committee, 2009- present
 Southwest Center for HIV/AIDS Humanitarian Award, 2009.
 Co-Chair, Vaccine Development Symposium, ASM Biodefense Meeting, Feb. 2008
 Co-Chair, Vaccine Session, International Poxvirus Symposium, June 2008
 Member, National Cancer Institute of Canada Site Visit Review Team, Ottawa, Canada, Feb. 2007
 Nominated, Arizona Bioindustry Association Bioscience Researcher of the Year, June, 2007
 Barrett Honors College Certificate of Appreciation, Honors Disciplinary Faculty, 2005-2006
 Arizona Governor's Celebration of Innovation, Innovator of the Year, Academia, 2006

Distinguished Nominee, ASU Parent's Association Professor of the Year, 2006
Chair, Blended Science Session, 4th Annual SIRC Research Conference
Member, Board of Directors, The Medicine Tree, 2005-2008
Member, Board of Advisors, Students for International Change, 2005-
Faculty Advisor, ASU Branch, Students for International Change, 2004-2008
Chair, Vaccines Session, NIH Orthopoxvirus Research Meeting, April 2005
Chair, Vaccines Session, 8th International Conference 'Emerging Technologies in Drug and
Gene-based Therapeutics', Crete, September 2005
Chair, Orthopoxvirus Session, US-Russia Cooperative Biological Research Conference, St.
Petersburg, Russia, October, 2005
Member, NIH Virology A study Section, 2005-2008
Member, Editorial Board, Journal of Virology, 2005-present
Member, Editorial Board, Journal of Biological Chemistry, 2006-2011
Invited Speaker, NIH Poxvirus Bioterrorism Research Meeting, Bethesda, MD. 2002, 2003,
2004, 2005, 2006, 2007.
Member, NIH VATID Study Section, 2004
Ad-hoc member, Virology Study Section, NIH, Oct., 2004
Member, Atopic Dermatitis and Vaccinia Immunization Network Review Panel, 10/03
Ad-hoc member, Experimental Virology Study Section, NIH, Oct., 2003
Chair, Poxvirus Proteomics Review Panel, NIH, Sept., 2003
Ad-hoc member, Virology Study Section, NIH, June, 2003
Arizona/Nevada Branch ASM, Keynote Speaker, February, 2003
University of Illinois 6th Annual Conference on New and Re-emerging Infectious Diseases,
Keynote Speaker, April, 2003.
Member, US Inter-agency Smallpox Working Group, 2002
Member, Poxvirus Proteomics Review Panel, NIH, Dec. 2002
Ad-hoc member, Experimental Virology Study Section, NIH, Oct., 2002
Poxvirus expert, Biotechnology Enhancement Program Site Visit Team, VECTOR,
Novosibirsk, Russia. July 20-25, 2002. Site visit is to audit a joint CDC/VECTOR
grant, "Variola (smallpox) Genome Project."
Consultant, ISTC Project 1987, VECTOR, January 2003-2007
Member, Rapid Response to Bioterrorism Study Section, NIH, June, 2002
Chair, Poxvirus Pathogenesis Session of the International Poxvirus Symposium, Lake Placid,
NY September 19-25, 2002.
Editorial Board, *Virology*, 1993-2002

RECENT INVITED LECTURES/SEMINARS

2014

Sanofi Pasteur, Education Days on Vectors/Delivery Systems, Poxvirus vaccine vector
development

2013

Kilimanjaro Christian Medical Center. Moshi, Tanzania

Muhumbili University, Dar es Salaam, Tanzania
Community Development Training Institute, Tengeru, Tanzania
Poxvirus T Cell Vaccine Discovery Consortium (PTVDC) Scientific Advisory Board Meeting
RepliVax Scientific Advisory Board Meeting

2012

University of Capetown, South Africa
Poxvirus T Cell Vaccine Discovery Consortium (PTVDC) Scientific Advisory Board Meeting

2011

Phoenix World AIDS Day Commemoration
Keynote Speaker, ASU Molecular and Cellular Biology Retreat
Spirit of the Senses
ASU Dual Use Research Symposium
Poxvirus T Cell Vaccine Discovery Consortium (PTVDC) Scientific Advisory Board Meeting

2010

University of North Carolina, Chapel Hill
University of Capetown, South Africa
Southern Research Institute, Birmingham, Alabama
Southwest College of Naturopathic Medicine
PTVDC Scientific Advisory Board Meeting

2009

Southwest Center for HIV/AIDS Board Meeting
University of Arizona
Spirit of the Senses

2008

ASM Biodefense Meeting
University of Arizona
University of Rochester

2007

Department of Molecular and Cellular Biology, University of California, Santa Barbara
Body Positive Board of Directors Planning Meeting, Phoenix, AZ
HIV In Service Training, Grace Lutheran Church
SoLS Studio, ASU
Keynote Speaker, 1st Annual SIC Fundraising Banquet
Biophysics Chalk Coffee Chalk Talk, ASU
NIH Poxvirus Research Meeting
PTVDC Site Visit, Lausanne, Switzerland
Arizona Science Center, Science Cafe

2006

Dept. of Microbiology and Immunology, University of Texas, Health Sciences Center, San Antonio
ASU Emeritus College Symposium
Spirit of the Senses, Travels in Virology

TEACHING

Honors: Nominated for College of Liberal Arts and Sciences Distinguished Teaching Award (1985/86, 1986/87, 1988/899, 1990/91). Selected for College of Liberal Arts and Sciences Distinguished Teaching Award, 1990/91. Graduate Student Council Outstanding Faculty Mentor, 1996. Parent's Association Professor of the Year, Distinguished Nominee, 2006, 2011.

MIC 314 HIV/AIDS: Science, Behavior and Society. 3 Credits, Fall and Spring (1996-present). Lecturer and Faculty-in-charge. Class size, 100-200 students.

BIO 340 General Genetics. 4 credits, Fall 2012, Fall 2013. Team taught. Class size, 420.

MIC 498 Molecular Techniques. 3 credits, Spring Semester (1991-2002, 2010). Team taught. Lecturer and Faculty-in-charge. Class size 6-12 students.

MIC 485 General Virology. 3 credits, Fall Semester (1985-2002). Sole lecturer and Faculty-in-charge. Class size 30-40.

PROFESSIONAL TRAVEL, COMMUNITY SERVICE

Boards of Directors/Advisors Non-profit HIV Service Organizations:

Support for International Change

HEAL, International

Aunt Rita's Foundation

Speaker, Phoenix World AIDS Day celebration, December, 2010; December 2011

Orientation Leader, SIC HIV Awareness Campaign, Arusha Tanzania, 2002-2013.

Travel to Novosibirsk, Russia as a scientific consultant, 2002-2007.

CONSULTING

Aviratek, 2012-present. Botanical anti-virals.

Venable LLP, 2005. Poxvirus vaccine vector patents.

SIGA Technologies. 2005-2007. Smallpox Anti-viral Advisory Panel.

Frommer, Lawrence & Haug LLP, 2009. Poxvirus vaccine vector patents.

Emergent Biosolutions. 2010. Poxvirus vaccine vector patents.

CURRENT and PENDING FUNDING

Bill and Melinda Gates Foundation (Jacobs, co-PI), 8/06-7/14. "Poxvirus T-cell Vaccine Discovery Consortium". The Aims of this proposal are to improve poxviruses as T cell vaccine vectors, with the goal of increasing immunogenicity of poxviruses as HIV vaccine vectors. \$200,000 total costs/year.

Bill and Melinda Gates Foundation (B. Jacobs, co-PI) /1/11 – 8/31/14. "Poxvirus T Cell Discovery Core." Supplemental Grant. This supplemental grant provides support to carry the selected "best-in-class" candidate forward to clinical trials; the candidate is the one constructed in the Jacobs lab. \$200,000 total funding.

NIH R01 AI095394. “dsRNA characterization in monkeypox-infected cells.” 7/2012-7/2017. App. \$250,000/year in direct costs. Full IDC recovery.

Bill and Melinda Gates Foundation (B. Jacobs, PI), submitted, “Rapid Production of Vectors Expressing Envs from Subjects Producing HIV-1 Broad Neutralizing Antibodies”.