

October 2005

CURRICULUM VITAE
Loren D. Fast, Ph.D.

Business Address: Division of Hematology/Oncology
Rhode Island Hospital
593 Eddy Street
Providence, Rhode Island 02903

Business Telephone: (401) 444-8091

Business Fax: (401) 444-8918

E-mail: Loren_Fast@brown.edu

EDUCATION:

1975 B.A. Bethel College, St. Paul, Minnesota
Chemistry with highest honors

Honors

Edith L. Larson Scholarship	1973-74
John Slivka Memorial Scholarship in Science	1974-75
Chemistry Alumni Award	1974-75

1980 Ph.D. University of Minnesota, St. Paul, Minnesota
Genetics

Honors

Bush Foundation Graduate Fellowship	1975-78
American Cancer Society Institutional Research Award	1978

POSTGRADUATE TRAINING:

1975 to 1980 Graduate student in laboratory of Dr. David P.
Fan, Department of Genetics and Cell Biology,
University of Minnesota, St. Paul, Minnesota

1980 to 1982 Postdoctoral Fellow in laboratory of Dr.
Walter Newman, Division of Basic
Immunology, Fred Hutchinson Cancer
Research Center, University of Washington
School of Medicine, Seattle, Washington

1982 to 1983 Postdoctoral Fellow in laboratory of Dr. John Hansen, Division of Medical Oncology, Fred Hutchinson Cancer Research Center, University of Washington School of Medicine, Seattle, Washington

POSTGRADUATE HONORS AND AWARDS

Awarded Postdoctoral Fellowships by:
American Cancer Society
Leukemia Society of America
National Science Foundation

ACADEMIC APPOINTMENTS

2000 to present Associate Professor of Medicine (Research)
Brown University

1983 to 2000 Assistant Professor of Medicine (Research),
Brown University

1986 to present Member, Graduate Program in Physiology,
Neurobiology and Biomedical Engineering,
Brown University

1987 to present Member, Graduate Program in Molecular
Biology, Cell Biology and Biochemistry, Brown
University

1996 to present Member, Graduate Program in Pathobiology, Brown
University

HOSPITAL APPOINTMENTS

1983 to 1988 Research Associate, Division of Clinical
Hematology, Rhode Island Hospital

1988 to present Director of Research Laboratory, Division of Hematology,
Rhode Island Hospital

OTHER APPOINTMENTS

1983 to present Ad hoc reviewer for Journal of Immunology, American
Journal of Pathology, Transfusion and Blood.

1992 to 2000 Grant reviewer for the Louisiana Cancer and Lung Trust
Fund Board.

1997 to 2001 Grant reviewer for the Brown University ACS Small Grants
Program

2003 Grant reviewer for NIH SBIR study section ZRG1 HT

RHODE ISLAND HOSPITAL COMMITTEES

- | | |
|-----------------|---|
| 2000 to present | Biohazard and Laboratory Safety Committee, Chairperson |
| 1994 to 2000 | Animal Welfare Committee
(Associate Chairperson 1999-2000) |
| 1995 | Subcommittee to provide recommendations for building design for proposed RIH research building. |

UNIVERSITY COMMITTEES

- | | |
|-----------------|---|
| 1996 to 2001 | Member on MMI search committee for assistant professor. |
| 1996 to 2001 | Pathobiology Admissions Committee.
(Cochairperson 1999-2000) |
| 2003 to present | Pathobiology Curriculum Committee, vice chairperson |

MEMBERSHIP IN SOCIETIES:

- | | |
|-----------------|---------------------------------------|
| 1984 to present | American Association of Immunologists |
| 2000 to present | American Association of Blood Banking |
| 2001 to present | American Society of Hematology |

PUBLICATIONS (PEER-REVIEWED)

1. Fast, L.D., Fan, D.P. Dissociated and reconstituted subcellular alloantigen capable of stimulating mouse cytotoxic T lymphocytes in vitro. *J. Immunol.* 120:1092-1096, 1978.
2. Fast, L.D., Fan, D.P. Alloantigen bound to agarose beads and syngeneic carrier cells are capable of stimulating mouse cytolytic T lymphocytes in vitro. *J. Immunol.* 123:1491-1496, 1979.
3. Fast, L.D., Fan, D.P. An adherent, radiosensitive accessory cell necessary for mouse cytolytic T lymphocyte response to viral antigen. *J. Immunol.* 126:1114-1119, 1981.
4. Fast, L.D., Hansen, J.A., Newman, W. Evidence for T cell nature and heterogeneity within natural killer (NK) and antibody-dependent cellular cytotoxicity (ADCC) effectors: A comparison with cytolytic T lymphocytes (CTL). *J. Immunol.* 127:448-452, 1981.
5. Newman, W., Fast, L.D., Rose, L.M. Blockade of NK cell lysis is a property of monoclonal antibodies that bind to distinct regions of T-200. *J. Immunol.* 131:1742-1747, 1983.
6. Fast, L.D., Beatty, P.G., Hansen, J.A., Newman, W. T cell nature and heterogeneity of recognition structures of human natural killer (NK) cells. *J. Immunol.* 131:2404-2410, 1983.

7. Gjerset, G.F., Martin, P.J., Counts, R.B., Fast, L.D., Hansen, J.A. Immunologic status of hemophilia patients treated with cryoprecipitate or lyophilized concentrate. *Blood* 64:715-720, 1984.
8. Newman, W., Targan, S.R., Fast, L.D. Immunobiological and immunochemical aspects of the T-200 family of glycoproteins. *Molec. Immunol.* 21:1113-1122, 1984.
9. Albala, M.M., Davignon, D., Fast, L.D., Clark, D.D. Normal T cell subsets and lymphocyte activity in multiple sclerosis. *Clin. exp. Immunol.* 61:542-547, 1985.
10. Albala, M.M., Fast, L.D., Davignon, D. Systemic lupus erythematosus with deficiency of the T4 epitope on T4 helper/inducer cells. *N. Engl. J. Med.* 313:1544, 1986 (correspondence).
11. Davignon, D., Fast, L.D., Albala, M.M. Inhibition of in vitro lymphocyte function by a soluble AKR leukemic suppressor factor. *Cellular Immunol.* 99:364-374, 1986.
12. Weltman, J.K., Pedroso, P., Johnson, S.A., Fast, L.D., Leone, L.A., Cuttitta, F., Minna, J.D. Indirect immunotoxin method for demonstrating antibodies against human tumor cells. *Biotechniques* 4:224-228, 1986.
13. Weltman, J.K., Pedroso, P., Johnson, S.A., Davignon, D., Fast, L.D., Leone, L.A. Rapid screening with indirect immunotoxin for monoclonal antibodies against small cell lung cancer. *Cancer Res.* 47:5552-5556, 1987.
14. Lawrence, H.J., Magenis, R.E., Fast, L.D., Kamoun, M. Erythrophagocytic T-cell lymphoma: immunologic and cytogenetic evidence for a clonal malignancy of the CD8-positive T-cell subclass. *Disease Markers* 6:141-150, 1988.
15. Weltman, J.K., Pedroso, P., Johnson, S.A., Fast, L.D. Mediation of indirect immunotoxin activity by antibodies against leukocyte membrane antigens. *Antibody, Immunoconjugates and Radiopharmaceuticals* 2:29-36, 1989.
16. Fast, L.D. DBA/2J and DBA/2Ha lymphocytes differ in their ability to induce graft-versus-host disease. *J. Immunol.* 143:2489-2493, 1989.
17. Fast, L.D. Identification of a single non-H-2 gene regulating graft-versus host disease response. *J. Immunol.* 144:4177-4182, 1990.
18. Fast, L.D., Kouttab, N.M., Badamchian, M., Goldstein, A.L. Thymic hormone modulation of age-induced changes in the induction of graft-versus-host disease by DBA/2J lymphocytes. *Cellular Immunol.* 131:232-241, 1990.
19. Fast, L.D. In vitro characterization of a murine recipient anti-donor effector cell responsible for the development of chronic graft-versus-host disease. *J. Immunol.* 147:1731-1738, 1991.
20. Fast, L.D. Generation and characterization of IL-2-activated veto cells. *J. Immunol.* 149:1510-1515, 1992.

21. Buzzi, M., Lu, L., Lombardi, A.J., Jr., Posner, M.R., Brautigan, D.L., Fast, L.D., Frackleton, A.R.Jr. Differentiation-induced changes in protein-tyrosine phosphatase activity and commensurate expression of CD45 in human leukemia-cell lines *Cancer Res.* 52:4027-4035, 1992.
22. Durie, F. H., A. Arrufo, J. Ledbetter, K. M. Crassi, W. R. Green, L. D. Fast, and R. J. Noelle. Antibody to the ligand of CD40, gp39, blocks the occurrence of the acute and chronic forms of graft-vs.-host disease. *J. Clin. Invest.* 94:1333-1338, 1994.
23. Su, H. C., J. S. Orange, L. D. Fast, A. T. Chan, S. J. Simpson, C. Terhorst, and C. A. Biron. IL-2-independent NK cell responses discovered in virus-infected b2-microglobulin-deficient mice. *J. Immunol.* 153:5674-5681, 1994.
24. Buhlmann, J. E., T. M. Foy, A. Aruffo, K. M. Crassi, J. A. Ledbetter, W. R. Green, J. C. Xu, L. D. Schultz, D. Roopenian, R. A. Flavell, L. Fast, R. J. Noelle, and F. H. Durie. In the absence of a CD40 signal, B cells are tolerogenic. *Immunity* 2: 645-653, 1995.
25. Fast, L. D., C. R. Valeri, and J. P. Crowley. Immune responses to major histocompatibility complex homozygous lymphoid cells in murine F₁ hybrid recipients.: Implications for transfusion-associated graft-versus-host disease. *Blood* 86:3090-3096, 1995.
26. Fast, L. D. Recipient CD8⁺ cells are responsible for the rapid elimination of allogeneic donor lymphoid cells. *J. Immunol.* 157: 4805-4810, 1996.
27. Su, H. C., L. P. Cousens, L. D. Fast, M. K. Slifka, R. D. Bungiro, R. Ahmed, and C. A. Biron. CD4⁺ and CD8⁺ T cell interactions in IFN- and IL-4 responses to viral infections: Requirements for IL-2. *J. Immunol.* 158: 5007-5017, 1998.
28. Fast, L. D. Recipient elimination of allogeneic lymphoid cells: Donor CD4⁺ cells are effective alloantigen presenting cells. *Blood* 96:1144-1149, 2000.
29. Wagner, E. F., N. Hanna, L. D. Fast, N. Kouttab, P. R. Shank, A. Vazquez, and S. Sharma. Novel diversity in IL-4-mediated responses in resting human naïve B cells versus germinal center/memory B cells. *J. Immunol.* 165:5573-5579, 2000.
30. Fast, L., G. DiLeone, C. Edson, and A. Purmal. INACTINE™ PEN110 treatment functionally inactivates the PBMNC present in RBC units: Comparison to the effects of exposure to ⁶⁰Co-irradiation. *Transfusion* 42:1318 – 1325, 2002.
31. Fast, L. D., G. DiLeone, C. Edson, and A. Purmal. Inhibition of murine GVHD by INACTINE™ PEN110 treatment. *Transfusion* 42:1326-1332, 2002.
32. Plevyak M, Hanna N, Mayer S, Murphy S, Pinar H, Fast L, Ekerfelt C, Ernerudh J, Berg G, Matthiesen L, and Sharma S. Deficiency of decidual IL-10 in first trimester missed abortion: a lack of correlation with the decidual immune cell profile. *Am. J. Reprod. Immunol.* 47, 242-250 (2002).

33. Fast, L. The effect of exposing murine splenocytes to UVB light, psoralen plus UVA light or γ -irradiation on in vitro and in vivo immune responses. *Transfusion* 43:576-583, 2003.
34. Fast, L. Genotypic regulation of alloantibody production in response to ultraviolet B irradiated allogeneic donor cells. *Transfusion* 43:1295-1302, 2003.
35. Fast, L., J. Semple, G. DiLeone, M Kim, J Freedman, J Chapman, and A Purmal. Inhibition of xenogeneic graft-versus-host disease by INACTINE™ PEN110 treatment of donor human peripheral blood mononuclear cells. *Transfusion* 44:282-285, 2004.
36. Fast, L. Control of immune responses induced by the transfer of allogeneic leukocytes during transfusion. *Transfusion* 45:44S-50S, 2005.
37. Murphy, S.P., L.D. Fast, N. N. Hanna, S.Sharma Uterine NK Cells Mediate Inflammation-Induced Fetal Demise in IL-10-Null Mice. *J Immunol* 175:4084-4090, 2005.
38. Fast, L.D., G. DiLeone, J. Li, R Goodrich. Functional inactivation of white blood cells by Mirasol treatment. *Transfusion* 46:642-648, 2006.
39. Fast, L.D., G. DiLeone, G. Cardarelli, J. Li, R. Goodrich. Mirasol PRT treatment of donor leukocytes prevents the development of xenogeneic graft-versus-host disease in Rag2^{-/-} c^{-/-} double knockout mice. *Transfusion* (in press, 2006)

INVITED PRESENTATIONS

1. 1986 June Dartmouth College Department of Microbiology Hanover, New Hampshire
2. 1986 November Bethel College Department of Biology and Chemistry St. Paul, Minnesota
3. 1987 December Brown University MCB Seminar Series
4. 1989 December Brown University Immunology Seminar Series
5. 1990 October Providence College Department of Biology, Providence, Rhode Island.
6. 1991 April Naval Blood Research Laboratory, Boston, Massachusetts.
7. 1991 September Brown University Immunology Seminar Series
8. 1991 November University of Mississippi Medical Center Department of Microbiology Jackson, Mississippi.
9. 1991 November Mississippi Tougaloo College Department of Biology, Tougaloo, Mississippi
10. 1992 July Fred Hutchinson Cancer Research Center, Department of Oncology, Seattle, Washington

11. 1993 September Rhode Island Hospital, Department of Pathology, Providence, RI
12. 1995 September Dartmouth College, Department of Microbiology, Hanover, New Hampshire
13. 1997 September Rhode Island Blood Bankers Society Symposium Providence, RI
14. 1999 September Brown University Molecular Microbiology and Immunology seminar series, Providence, RI
15. 2002 July Blood Centers of the Pacific San Francisco, CA
16. 2003 December Rhode Island Hospital Surgical Research Seminar, Providence, RI
17. 2006 January Brown University, Collaborative for Vaccine Research and Development, Providence, RI

GRANTS

1. Monoclonal antibody treatment of graft-versus-host disease. (P.I.)
Fred M. Roddy Foundation 1/1/84 to 12/31/84 \$5,000
2. Monoclonal antibody treatment of graft-versus-host disease. (P.I.)
Rhode Island Foundation 1/1/85 to 12/31/87 \$10,400
3. Immune regulation of murine graft-versus-host disease. (P. I.)
ACS Institutional Research Grant(Brown University) 9/1/84 to 8/31/86 \$2,900
4. Immune regulation of murine graft-versus-host disease. (P. I.)
NIH 5 RO1 CA 41603 5/1/87 to 4/30/90 \$182,980. direct costs
5. Relationship of proliferation to malignant transformation of CD5⁺ B cells. (P. I.)
ACS Institutional Research Grant(Brown University) 8/1/88 to 7/31/90 \$9,000
6. The effect of autologous nonviable RBC on in vivo immune response. (P. I.)
Naval Blood Research Laboratory 3/1/91 to 8/31/92 \$114,000.
7. Regulation of immune response in a murine model of SLE. (P. I.) The Rhode Island Chapter
of the Lupus Foundation of America 9/1/91 to 8/31/92 \$2,500.
8. Blood Transfusion and GVHD: Induction, Prevention and Modulation. (P. I.)
National Blood Foundation 7/1/92 to 6/30/93 \$30,000
9. Underrepresented Minority Investigators in Asthma and Allergy Award. American
Academy of Allergy and Immunology 7/1/93 to 6/30/95 \$60,000 Sponsor for Kathy
Munemasa M.D.
10. Regulation of immune response in a murine model of SLE. (P. I.) The Rhode Island Chapter
of the Lupus Foundation of America 4/1/94 to 3/31/95 \$1,500
11. Tolerance induction using donor lymphoid cells plus anti-gp39. (P. I.) Rhode Island
Hospital Developmental Funds 12/1/94 to 11/30/95 \$21,325.
12. Induction of donor specific tolerance. (P. I.) Rhode Island Hospital Developmental Funds
12/1/95 to 11/30/96 \$20,000.
13. The immunologic consequences of blood transfusion: early events. (P. I.) National Blood
Foundation 7/1/96 to 6/30/97 \$30,000
14. Characterization of the antigens responsible for the induction of Factor VIII inhibitors. (P.I.)
Octapharma 10/1/96 to 9/30/99 \$110,200
15. Cytokine mediated regulation of immune responses in SJL mice. (P.I.) Francis Chafee
Allergy Research Fund 7/1/97-6/30/99 \$10,000
16. Immunological consequences of transfusion. (P.I.) NIH/NHLBI 1 RO1 HL59241-01
4/1/99 – 3/31/03 \$499,392 direct costs

17. The effect of INACTINE on lymphocyte response. (P.I.) Pentose Pharmaceuticals now V. I. Technologies 10/01/00 - 3/31/05 \$194,928.
18. Regulation of immune responses to PUVA treated cells (P.I.) Therakos \$46,759
09/01/03 – 06/30/05
19. Studies on the effect of Riboflavin + light treatment on in vitro and in vivo immune responses of human peripheral blood mononuclear cells (P.I.) Navigant \$62,885
09/01/04 - 05/31/05
20. CD4 cells as APC (P.I.) COBRE Pilot Study \$25,000 07/01/05 – 06/30/06
21. Studies on the effect of Riboflavin + light treatment on transfusion induced alloimmunization (P.I.) Navigant \$39,963 09/01/05 – 03/31/06
22. Studies on the effect of Riboflavin + light treatment of RBC units on white blood cell function (P.I.) Navigant \$61,556 05/01/06 to 12/31/06

UNIVERSITY TEACHING ROLES

1986 to 1989	Course Director, Brown University undergraduate immunology course (Bio 053) entitled "Principles of Immunology" (60 –80 students)
1985 to 1987	Organizer and lecturer in a 6-10-lecture immunology review course for residents and fellows (10 students)
1991	Course Director, Brown University undergraduate/graduate course (Bio 160) entitled "Experimental Cellular Immunology" (40 students)
1993, 1996	Course Director, Brown University undergraduate/graduate course (Bio 253/254) entitled "Advanced Immunology" (15 students)
1989 to present	Guest Lecturer in: Cancer Biology (Bio 129) 1989 -1993, 1995, 1997, 2000-2002, 2004 Principles of Immunology (Bio 053) 1990 - 2004 Medical Microbiology (Bio 158) 1995, 1996, 1998
1991, 1994	Guest lecturer in Immunology for 1 week at Tougaloo College, Tougaloo, Mississippi
1992, 1999, 2004	Guest lecturer in Immunology, Pfizer Laboratories, Inc.
1995	Guest lecturer in Cancer Biology Pfizer Laboratories, Inc.
2002	Course leader Cancer Biology BI 129 Pfizer Laboratories (65 students)
2003	Course leader Immunopathology BI 284 (2 students)
2004	Guest lecturer Endocrinology BI030

HOSPITAL TEACHING ROLES

1992 to 1995	Monthly Immunology lecture to Allergy Division
1997 to 2001	Lecturer to Renal Fellows

RESEARCH TRAINING:

1984 to present Supervised Brown University undergraduate research projects.
(Bio 195/196)

<u>Student</u>	<u>Period in laboratory</u>
Tracy Giordano	Fall 1984
Alfred Slanetz	Spring 1985
Naiyer Imam	Summer, Fall 1985
Steven Campbell	Fall 1986; Spring 1987
Michael Girardi	Spring, Summer 1987
Dan Kaul	Summer, Fall 1987
Steve Chao	Summer 1988
Laura Sherry	Fall 1988
Susan Fernandez	Fall 1990
Craig Grimes	Spring 1991
Eugene Kim	Summer 1991
Joanna Power	Fall 1992
Stephen Shin	Summer 1993
Anand Soni	Spring 1994
Mitali Bapna	Fall 1994, Spring 1995
Rahul Banerjee	Fall 1994, Spring 1995
Charles Rexer	Fall 1995, Spring 1996
Nidhi Kansal	Fall 1995, Spring 1996
Deborah Sah	Summer 1996
Jayson Perriera	Summer, Fall 1996, Spring 1997
Peter Yoon	Fall 1996, Spring 1997
Daniel Bauer	Fall 1997, Spring 1998
Steven Spencer	Fall 1997, Spring 1998
Chester Lee	Fall 1997, Spring 1998
Leela Raju	Fall 1998, Spring 1999
David Choi	Fall 1998, Spring 1999
Robert Kang	Fall 1998, Spring 1999
Justine Chang	Summer 1999
Rheanna Platt	Summer 1999, Fall 1999, Spring 2000
Elisa Margolis	Summer 1999, Fall 1999, Spring 2000
Ethan Babcock	Summer 2000, Fall 2000, Spring 2001
Shayan Shirizian	Summer 2000, Fall 2000, Spring 2001
Marilyn Augustine	Summer 2000, Fall 2000, Spring 2001
Olivia Rissland	Summer 2001
David Hyman	Summer 2001, Fall 2001, Spring 2002
Tamara Stolz	Summer 2001, Fall 2001, Spring 2002
Lisa Jaspersen	Fall 2002, Spring 2003
Joshua Schulman-Marcus	Fall, 2003, Spring 2004
Mariana Chuck	Spring 2004, Fall 2004
Benjamin MacDonald	Summer 2005, Spring 2006, Summer 2006
Selorm Adsaku	Summer 2006

Supervised Brown University graduate student research projects

Brooke Pearson	Summer 1997
Liz Lavigne	Spring, Summer 1998

1985 to present Supervised research projects of fellows and residents.

<u>Fellow/Resident</u>	<u>Period in laboratory</u>
Deborah Scott	7/85 to 6/86
Susanna Leal	1/87 to 6/87
Gregory Bell	1/88 to 4/88
Edward Wyshock	7/88 to 12/88
Murat Anamur	1/90 to 6/90
Doron Ber	1/92 to 2/92
Kathy Munemasa	11/92 to 6/95
George Tsoulfas	Summer 1995
Jason Haldas	Fall 1998
Nisha Kakodkar	Spring 2006

1988 to present Supervised the summer research projects of students in the Early Identification Program(EIP).

<u>Student</u>	<u>Period in laboratory</u>
Dwight Coleman	Summer 1988
Dorothy Seay	Summer 1989
Aretha Green	Summer 1990
Dorkina Myrick	Summer 1991
Dorkina Myrick	Summer 1992
Joanne Del Rio	Summer 1993
Vonzella Bryant	Summer 1995
Asha Patton	Summer 1996
Danielle Young	Summer 1997
Janifer White	Summer 1998
Albert Jackson	Summer 1999
Tammy White	Summer 2000

1995 to present Served as mentor for high school students in Urban Collaborative Acceleration Program(UCAP)

<u>Student</u>	<u>Period in laboratory</u>
Preston Shorts	Fall 1995 to Spring 1996
Matt Godfrey	Fall 1996 to Spring 1997