

CURRICULUM VITAE

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Degrees

B.S.	1973	University of Massachusetts (UMASS) Amherst, Massachusetts	Biochemistry
Ph.D.	1980	University of North Carolina (UNC) Chapel Hill, North Carolina (Advisor - Joseph S. Pagano) Dissertation Title - Immune Response to Epstein-Barr Virus	Microbiology and Immunology

Professional Appointments

Feb. 1980 - Sept. 1980	Post-Doctoral Fellow, Scripps Clinic and Research Foundation, La Jolla, California
March 1984 - June 1984	Visiting Scientist, Department of Immunology, Karolinska Institute, Stockholm, Sweden
Oct. 1980 - Nov. 1987	Post-Doctoral Fellow (Oct. 1980 - Aug. 1982), Instructor (Sept. 1982 - Nov. 1983), Assistant Professor (Dec. 1983 - Nov. 1987), Departments of Pathology and of Molecular Genetics and Microbiology, UMASS Medical School, Worcester, Massachusetts
Dec. 1987 - June 1996	Assistant Professor of Medical Sciences (Dec. 1987 - June 1990), Associate Professor of Medical Sciences (<i>with tenure</i>) Department of Molecular Microbiology and Immunology (July 1990 - June 1996), Division of Biology and Medicine, Brown University, Providence, Rhode Island
July 1996 - <i>present</i>	Esther Elizabeth Brintzenhoff Professor of Medical Sciences, Department of Molecular Microbiology and Immunology, Division of Biology and Medicine, Brown University, Providence, Rhode Island

Administrative Experience

1995 - 1999	Director of the Pathobiology Graduate Program, Brown University
1999 - <i>present</i>	Chair, Department of Molecular Microbiology and Immunology, Brown University

Research

The Biron laboratory's research is directed at understanding innate immune responses to viral infections. The information obtained from its work has helped open-up this exciting field. Focus is at the level of biological context during evolving responses. The studies stay close to the *in vivo* condition, are multi-disciplinary, reveal the complexity of whole organism context, and define mechanisms. Work began almost exclusively directed at examining natural killer (NK) cells in human and mouse systems. This led to characterization of physiologically relevant factors controlling endogenous NK and T cell responses during infections of mice with lymphocytic choriomeningitis virus (LCMV) and murine cytomegalovirus (MCMV). The mediators examined include cytokines, glucocorticoid hormones, and chemokines. The most recent work has moved into defining mechanisms regulating accessibility to intracellular signaling pathways to shape the downstream consequences of cytokine exposure. The major conclusions and contributions to scientific knowledge can be grouped into four areas. **(1) NK Cell Regulation and Function** - The results have significantly contributed to proving NK cells are important in antiviral defense, to characterizing unique features of this cell subset and its responses, and to dissecting mechanisms regulating these cells *in vivo*. **(2) Induction and Cellular Sources of Innate Cytokines** - They have shown that there is a plasticity of sources, including plasmacytoid dendritic cells (pDCs), for innate cytokines during challenges with infectious agents, and are beginning to reveal the interactions in place to sense and elicit the responses most beneficial under the conditions of particular infections. **(3) Cytokine Function in Health and Disease** - They have demonstrated the role of innate cytokines in viral pathogenesis. In addition, they have shown how *in vivo* conditions dramatically alter consequences of cytokine administration and of secondary challenges with other microbial products, and suggested mechanisms by which underlying subclinical infections can predispose to critical illness during bacterial infections. **(4) Unique Roles for, and Mechanisms Regulating Functions of, Type 1 Interferons (i.e. IFN α/β)** - They have demonstrated that the signal transducer and activator of transcription 1 (STAT1) is required for certain, but negatively regulates other potential, IFN- $\alpha\beta$ immunoregulatory effects, and that total STAT1 protein levels are dynamically regulated during the course of an endogenous viral infection with accompanying changes in type 1 IFN activation of another signaling molecule and consequences for CD8 T cell proliferation. In contrast, NK cells are predisposed to respond to type 1 IFN with STAT4 activation because they uniquely express high basal levels of the molecule pre-associated with the cytokine receptors. These observations suggest that endogenous pathways are in place to differentially regulate levels of individual signaling molecules to qualitatively modify downstream responses to cytokines. Taken together, the laboratory's efforts are helping to shape a clear picture of mechanisms in place to promote the induction and function of innate immune responses, and are providing insights for therapeutic approaches to enhance health in the treatment of infections, cancers, and immunodeficiencies.

Publications

(The work published has been cited over 8,200 times as of February 2007.)

Editor for Theme Issues of Journal Publications

1. Medzhitov, R., and C.A. Biron, editors for the Innate Immunity Section of *Current Opinion in Immunology* 15:2-4, 2003.

Book Chapters

1. Mason, T., P. Boerner, and C.A. Biron. The use of double mutant strains containing both heat and cold sensitive mutations in studies of mitochondrial biogenesis. In: Genetics and Biogenesis of Chloroplasts and Mitochondria. Th. Bucher et al., eds., Elsevier/North Holland Biomedical Press, Amsterdam, The Netherlands, p. 239-246, 1976.
2. Biron, C.A., and R.M. Welsh. Proliferation and role of natural killer cells during viral infection. In: NK Cells and Other Natural Effector Cells. R.B. Herberman, ed., Academic Press, New York, p. 493-498, 1982.

3. Welsh, R.M., **C.A. Biron**, D.C. Parker, J.F. Bukowski, S. Habu, K. Okumura, M.V. Haspel, and K.V. Holmes. Regulation and role of natural cell-mediated immunity during virus infection. In: Human Immunity to Viruses. F.A. Ennis, ed., Academic Press, New York, p. 21-41, 198
4. Welsh, R.M., **C.A. Biron**, J.F. Bukowski, K.W. McIntyre, R.J. Natuk, and H. Yang. Regulation of viral infections by large granular lymphocytes. In: Progress in Leukocyte Biology, vol. 5, Leukocytes and Host Defense. J.J. Oppenheim, and D.M. Jacobs, eds., Alan L. Liss, Inc., New York, p. 403-410, 1986.
5. **Biron, C.A.**, and R.M. Welsh. Antigenic distinctions and morphological similarities between proliferating NK and cytotoxic T cells. In: Natural Immunity, Cancer and Biological Response Modification. E. Lotzova, ed., S. Karger AG, Basel, Switzerland, p. 289-297, 1986.
6. Welsh, R.M., R.J. Natuk, K.W. McIntyre, H. Yang, **C.A. Biron**, and J.F. Bukowski. Factors influencing the control of virus infection by natural killer cells. In: Functions of the Natural Immune System. C.W. Reynolds and R.H. Wiltout, eds., Plenum Publishing Corp., New York, NY, p. 111-128, 1988.
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8. Kasaian, M.T., and **C.A. Biron**. Effects of ciclosporin A on poly I:C-induced NK cell activation and IL-2 transcription. In: Natural Killer Cells: Biology and Clinical Application. R.E. Schmidt, ed., Karger Publishing Corp., Basel, Switzerland, p. 194-196, 1990.
9. Ahmed, R., and **C.A. Biron**. Immunity to viruses. In: Fundamental Immunology, Fourth Edition. W.E. Paul, ed., Lippincott-Raven Publishers, New York, NY, p. 1295-1334, 1999.
10. Miller, A.H., B.D. Pearce, M.C. Ruzek, and **C.A. Biron**. Interactions between the hypothalamic-pituitary-adrenal axis and immune system during viral infection: pathways for environmental effects on disease expression. In: Handbook of Physiology, Section 7, The Endocrine System, Volume IV: Coping with the Environment - Neural and Endocrine Mechanisms. B. S. McEwen, ed., Oxford Press, New York, NY, p. 425-450, 2001.
- 11/12. **Biron, C.A.**, and G.C. Sen. Interferons and Other Cytokines. In: Fields Virology, Fourth Edition and Fundamental Virology, Fourth Edition. D.M. Knipe, P.M. Howley, D.E. Griffin, R.A. Lamb, M.A. Martin, B. Roizman, and S.E. Straus, eds., Lippincott, Williams & Wilkins, Philadelphia, p. 321-351, 2001.
13. Pearce B.D., **C.A. Biron**, and A.H. Miller. Neuroendocrine-immune interactions during viral infections. In: Neurovirology, Advances in Virus Research, Vol. 56. M Buchmeier and I. Campbell, eds., Academic Press, New York, NY, p. 469-513, 2001.
14. **Biron, C.A.**, M. Dalod, and T.P. Salazar-Mather. Innate Immunity and Viral Infections. In: Immunity to Infections. S.H.E. Kaufmann, A. Sherr, and R. Ahmed, eds., American Society for Microbiology, p.139-160, 2001.
15. **Biron, C.A.**, K. Nguyen, and G. Pien. Innate Immune Responses to LCMV Infections: Natural Killer Cells and Cytokines. In: Current Topics in Microbiology and Immunology - Volume 263, Arenaviruses II; Biology and Pathogenesis. M.B.A. Oldstone, ed., Springer-Verlag, p. 7-27, 2002.
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17. **Biron, C.A.**, and G.C. Sen. Innate Immune Responses to Viral Infection. In: Fields Virology, Fifth Edition. D.M. Knipe, and P.M. Howley, eds., Walter Kluwer/Lippincott, Williams & Wilkins, p. 249-278, 2007.
18. Nathanson, N. and **C.A. Biron**. Innate Immunity. In: Viral Pathogenesis and Immunity, Second Edition. N. Nathanson, ed. Academic Press, London, p. 59-71, 2007.

Journals

1. **Biron, C.A.**, L.M. Hutt-Fletcher, G.T. Wertz, and J.S. Pagano. Interferon production and activation of non-specific effector cells by stimulation with lymphoblastoid cell lines *in vitro*. *Int. J. Cancer* **27**:185-190, 1981.
2. **Biron, C.A.**, and R.M. Welsh. Activation and role of natural killer cells in virus infections. *Med. Microbiol. Immunol.* **170**:155-172, 1982.
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5. **Biron, C.A.**, L.R. Turgiss, and R.M. Welsh. Increase in NK cell number and turnover rate during acute virus infection. *J. Immunol.* **131**:1539-1545, 1983.
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13. Like, A.A., **C.A. Biron**, E.J. Weringer, K. Byman, V. Briggs, and D.L. Guberski. Prevention of diabetes in BioBreeding/Worcester (BB/WOR) rats with monoclonal antibodies that recognize T lymphocytes or natural killer cells. *J. Exp. Med.* **164**:1145-1159, 1986.
14. Woda, B.A., and **C.A. Biron**. Natural killer cell number and function in the spontaneously diabetic BB/W rat. *J. Immunol.* **137**:1860-1866, 1986.
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16. **Biron, C.A.**, P. van den Elsen, M.M. Tutt, P. Medveczky, V. Kumar, and C. Terhorst. Murine natural killer cells stimulated *in vivo* do not express the T cell receptor α , β , γ , T3 δ or T3 ϵ genes. *J. Immunol.* **139**:1704-1710, 1987.
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19. **Biron, C.A.**, K.S. Byron, and J.L. Sullivan. Severe herpesvirus infections in an adolescent without natural killer cells. *New Eng. J. Med.* **320**:1731-1735, 1989.
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20. **Biron, C.A.**, H.A. Young, and M.T. Kasaian. Interleukin-2-induced proliferation of murine natural killer cells *in vivo*. *J. Exp. Med.* **171**:173-188, 1990.
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29. **Biron, C.A.** Cytokines in the generation of immune responses to, and resolution of, virus infections. *Curr. Opin. Immunol.* **6**:530-538, 1994. *Invited Review Article*
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70. Doughty, L.A., K.B. Nguyen, J.E. Durbin, and **C.A. Biron**. A role for IFN- α/β in virus infection-induced sensitization to endotoxin. *J. Immunol.* **166**:2658-2664, 2001.
71. Wu, C., K.B. Nguyen, G.C. Pien, N. Wang, C. Gullo, D. Howie, M.R. Sosa, M.J. Edwards, P. Borrow, A.R. Satoskar, A.H. Sharpe, **C.A. Biron**, and C. Terhorst. SAP controls T cell responses to virus and terminal differentiation of TH2 cells. *Nature Immunology* **2**:410-414, 2001. *Paper Featured in Issue News and Views*
72. **Biron, C.A.** Interferon α and β as immune regulators - a new look. *Immunity* **14**: 661-664, 2001. *Invited Minireview Article for Cell Press Publication*
73. **Biron, C.A.**, and L. Brossay. NK and NK T cells in innate defense against viral infections. *Curr. Opin. Immunol.* **13**:458-464, 2001. *Invited Review Article*
74. Su, H.C., K.B. Nguyen, T.P. Salazar-Mather, M.C. Ruzek, M.Y. Dalod, and **C.A. Biron**. NK cell functions restrain T cell responses during viral infections. *Eur. J. Immunol.* **31**:3048-3055, 2001.
75. Asselin-Paturel, C., A. Boonstra, M. Dalod, I. Durand, N. Yessaad, C. Dezutter-Dambuyant, A. Vicari, A. O'Garra, **C. Biron**, F. Brière, and G. Trinchieri. Mouse type I interferon producing cells are immature antigen-presenting cells with plasmacytoid morphology. *Nature Immunology* **2**:1144-1150, 2001. *Paper Featured in Issue News and Views*
76. Dalod, M., T.P. Salazar-Mather, L. Malmgaard, C. Lewis, C. Asselin-Paturel, F. Brière, G. Trinchieri and **C.A. Biron**. IFN- α/β and IL-12 responses to viral infections: pathways regulating dendritic cell cytokine expression *in vivo*. *J. Exp. Med.* **195**:517-528, 2002. *Paper Featured in Issue Commentary*
77. Robbins, S.H., K.B. Nguyen, N. Takahashi, T. Mikamyama, **C.A. Biron**, and L. Brossay. Inhibitory functions of the killer cell lectin-like receptor G1 molecule during the activation of mouse NK cells. *J. Immunol.* **168**:2585-2589, 2002. *Cutting Edge Report*
78. Malmgaard, L., T.P. Salazar-Mather, C.A. Lewis, and **C.A. Biron**. Promotion of alpha/beta interferon induction during *in vivo* viral infections through alpha/beta interferon receptor/Stat1 system-dependent and -independent pathways. *J. Virol.* **76**:4520-4525, 2002.
79. Vivier, E. and **C.A. Biron**. A pathogen receptor on natural killer cells. *Science* **296**: 1248-1249, 2002. *Invited Perspective*
80. Salazar-Mather, T.P., C.A. Lewis, and **C.A. Biron**. Type I interferons regulate inflammatory cell trafficking and macrophage inflammatory protein-1 α delivery to liver. *J. Clin. Invest.* **110**:321-330, 2002.
81. Kelsall, B.L., **C.A. Biron**, O. Sharma, and P.M. Kaye. Dendritic cells at the host-pathogen interface. *Nature Immunol.* **3**:699-702, 2002. *Invited Meeting Report*

82. Nguyen, K.B., W.T. Watford, R. Salomon, S.R. Hofmann, G.C. Pien, A. Morinobu, M. Gadina, J.J. O'Shea, and **C.A. Biron**. Critical role for STAT4 activation by type 1 interferons in the interferon- γ response to viral infection. *Science* **297**:2063-2066, 2002.
83. Nguyen, K.B., T.P. Salazar-Mather, M.Y. Dalod, J.B. Van Deusen, X.-q. Wei, F.Y. Liew, M.A. Caligiuri, J.E. Durbin and **C.A. Biron**. Coordinated and distinct roles for IFN- α/β , IL-12, and IL-15 regulation of NK cell responses to viral infections. *J. Immunol.* **169**:4279-4287, 2002.
84. Pien, G.C., K.B. Nguyen, L. Malmgaard, A.R. Satoskar, and **C.A. Biron**. A unique mechanism for innate cytokine promotion of T cell responses to viral infections. *J. Immunol.* **169**:5827-5837, 2002.
85. Dalod, M., T. Hamilton, R. Salomon, T.P. Salazar-Mather, S. Henry, J.D. Hamilton, and **C.A. Biron**. Dendritic cell responses to early murine cytomegalovirus infection: subset functional specialization and differential regulation by interferon alpha/beta. *J. Exp. Med.* **197**:885-898, 2003.
86. Durbin, J., L. Doughty, K. Nguyen, M. Caliguri, J. Van Deusen, and **C. Biron**. The role of STAT1 in viral sensitization to LPS. *J. Endotoxin Res.* **9**:313-6, 2003.
87. Serbina, N.V., T.P. Salazar-Mather, **C.A. Biron**, W.A. Kuziel, and E.G. Pamer. TNF/iNOS producing dendritic cells (Tip-DC) mediate innate immune defense against bacterial infection. *Immunity* **19**:59-70, 2003. *Paper Featured in Issue Preview*
88. Townsend, M., A.S. Weinmann, J. Matsuda, R. Salomon, P. Farnham, **C.A. Biron**, L. Gapin, and L.H. Glimcher. T-bet regulates the terminal maturation and homeostasis of NK and V α 14NKT cells. *Immunity* **20**:477-494, 2004. *Paper Featured in Issue Preview*
89. Silverman, M.N., A.H. Miller, **C.A. Biron**, and B.D. Pearce. Characterization of an IL-6 and ACTH dependent, immune to adrenal pathway during viral infections. *Endocrinology* **145**:3580-3589, 2004. *Paper Featured in Editorial Review*
90. Hokeness, K.L., W.A. Kuziel, **C.A. Biron**, and T.P. Salazar-Mather. Monocyte chemoattractant protein-1 (MCP-1) and CCR2 interactions are required for IFN- α/β -induced inflammatory responses and antiviral defense in liver. *J. Immunol.* **174**:1549-1556, 2005.
91. Morra, M., R.A. Barrington, A.C. Abadia-Molina, S. Okamoto, A. Julien, C. Gullo, A. Kalsey, M.J. Edwards, G. Chen, R. Spolski, W.J. Leonard, B.T. Huber, P. Borrow, **C.A. Biron**, A.R. Satoskar, M.C. Carroll, and C. Terhorst. Defective B cell responses in the absence of SH2D1A. *Proc. Natl. Acad. Sci. USA* **102**:4819-4823, 2005.
92. Silverman, M.N., B.D. Pearce, **C.A. Biron**, and A.H. Miller. Immune modulation of the hypothalamic-pituitary-adrenal (HPA) axis during viral infection. *Viral Immunol.* **18**:41-78, 2005. *Invited Review*
93. Delale, T., A. Paquin, C. Asselin-Paturel, M. Dalod, G. Brizard, E.E. Bates, P. Ksastner, S. Chan, S. Akira, A. Vicari, **C.A. Biron**, G. Trinchieri, and F. Brière. MyD88-dependent and -independent murine cytomegalovirus sensing for IFN- α release and initiation of immune responses *in vivo*. *J. Immunol.* **175**:6723-6732, 2005.
94. Gil, M.P., R. Salomon, J. Louten, and **C.A. Biron**. Modulation of STAT1 protein levels, a mechanism shaping CD8 T cell responses *in vivo*. *Blood* **107**:987-993, 2006. *Paper Featured in Issue Comment*
95. Huang, D.R., F.-D. Shi, s. Jung, G.C. Pien, J. Wang, T.P. Salazar-Mather, T.T. He, J.T. Weaver, H.-G. Ljunggren, **C.A. Biron**, D.R. Littman, R.M. Ransohoff. The neuronal chemokine CX3CL1/fractalkin selectively recruits NK cells that modify experimental autoimmune encephalomyelitis within the central nervous system. *FASEB J.* **20**:896-905, 2006.

96. Garcia-Sastre, A., and **C.A. Biron**. Type 1 interferons and the virus-host relationship: A lesson in détente. *Science* **312**:879-882, 2006. *Invited Review for Special Issue*
97. Sjölin, H., S.H. Robbins, G. Bessou, Å. Hidmark, E. Tomasello, M. Johansson. H. Hall, F. Charifi, G.B. Karlsson Hedestam, **C.A. Biron**, K. Kärre, P. Höglund, E. Vivier, and M. Dalod. DAP12 signaling regulates plasmacytoid dendritic cell homeostasis and down-modulates their function during infection. *J. Immunol.* **177**:2908-2916, 2006.
98. Louten, J., N. van Rooijen, and **C.A. Biron**. Type 1 interferon deficiency in the absence of normal splenic architecture during lymphocytic choriomeningitis virus infection. *J. Immunol.* **177**:3266-3272, 2006. *Paper Featured "In This Issue" Section*
99. Allman, D., M. Dalod, C. Asselin-Paturel, T. Delale, S.H. Robbins, G. Trinchieri, **C.A. Biron**, P. Kastner, and S. Chan. Ikaros is required for plasmacytoid dendritic cells differentiation. *Blood* **108**:4025-4034, 2006.
100. Ryman, K.D, C.L. Gardner, K.C. Meier, **C.A. Biron**, R.E. Johnston, and W.B. Klimstra. Early restriction of alphavirus replication and dissemination contributes to age-dependent attenuation of systemic hyperinflammatory disease. *J. Gen. Virol.* **88**:518-529, 2007.
101. Lee, S.-H., T. Miyagi, and **C.A. Biron**. Keeping natural killer cells in highly regulated antiviral warfare. *Trends In Immunology* **28**:252-259, 2007. *Paper Noted on Cover*
102. Ivanov, S., A.-M. Dragoi, X. Wang, C. Dallacosta, J. Louten, G. Musco, G. Sitia, G. Yap, Y. Wan, **C.A. Biron**, M. E. Bianchi, H. Wang, and W.-M. Chu. A novel role for HMGB1 in TLR9-mediated inflammatory responses to CpG- DNA. *Blood*, **Epub ahead of print**, 2007. *Paper in Research Highlights of Nat. Reviews Immunol.* **7**:496, 2007
103. Miyagi, T., M.P. Gil, X. Wang, J. Louten, W.-M. Chu, and **C.A. Biron**. High basal STAT4 balanced by STAT1 induction to control type 1 interferon effects in natural killer cells. *J. Exp. Med.*, **in press**, 2007.

Special Educational Training Meetings

Mentoring and Peer Review Workshop, Sponsored by The National Cancer Institute and the Office of Research on Minority Health, Gaithersburg, MD, 1998

The 8th Annual Institute on Teaching and Mentoring, Sponsored by the Compact for Faculty Diversity, Atlanta, GA, 2001

Invited Workshop Participant with Distinction

Cancer Research Institute Workshop (Speaker and Participant), "From Coley's Toxins to Recombinant Cytokines: The Role of Interleukin-12 in the Immune Response, Disease, and Therapy", New York, NY, 1994

NIAID Workshop (Speaker and Participant), "Innate Immunity: Role in HIV Pathogenesis and Treatment", Gaithersburg, MD, 2001

Workshop on "Immunity to Viral Infections", Trudeau Institute, Saranac Lake, NY, 2002

NIAID Workshop (Speaker and Participant), "Antiviral Innate Immunity Meeting", Bethesda, MD, 2003

Vaccine Research Center, NIAID, HHS, DHHS Symposium (Speaker and Participant), "Viral Hemorrhagic Fevers", Bethesda, MD 2003

Neuroimmunology Discussion Group of The New York Academy of Sciences, Meeting on "The Challenges of and Responses to Viral Infections in the CNS" (Speaker and Participant), New York, NY, 2004 (*online archive*)

National Academies Brainstorming Workshop on "Antimicrobial Therapeutics: Immunomodulation", Washington, DC, 2005

Invited Speaker Presentations with Distinction

"Mechanisms of Host Defense: A Symposium in Honor of Robert J. North",
Trudeau Institute, Saranac Lake, NY, 1996

"Viral Pathogenesis Symposia", Scripps Research Institute, La Jolla, CA, 1998

"American Society for Investigative Pathology President's Symposium on Host Defense Mechanisms", Experimental Biology '99, Washington, DC, 1999

"First Annual Symposium on Immunology of Infectious Diseases", USUHS, Bethesda, MD, 1999

NIH Immunology Retreat, Warrenton, VA, 1999

The Rockefeller University Neuroimmunology Symposium, "Mind-Body Interactions: An Exploration of the Relationship Between Stress Hormones and Immune Function", New York, NY, 2001

The Seventeenth Shipley Symposium, Harvard Medical School, "Molecular Basis of Microbial Pathogenesis", Boston, MA, 2001

NIH Minisymposium, "Cytokines in Innate Immunity", for the Cytokine Interest Group at the National Institute of Health, Frederick, MD, 2002

NIH Immunology Interest Group Seminar, Bethesda, MD, 2002 (*video-telecast and online archive*)

Sixth Annual Norman P. Salzman Symposium in Virology, "Host Defenses Against Viral Infection", Bethesda, MD, 2004

Center for Cancer and Cell Biology Research Symposium "Cytokines in Cancer and Infection", Queen's University, Northern Ireland, 2005

Anderson Symposium on "Building Bridges Between Innate and Adaptive Immunity", Carter Immunology Center, University of Virginia, Charlottesville, VA, 2005

NCI Sponsored "Frontiers in Basic Immunology" Symposium, Bethesda, MA 2006

Institute for Advanced Study, Center for Systems Biology "Virology Symposium", Princeton, NJ, 2006

Invited Presentations at Meetings**International**

Intl. Workshop on Natural Killer Cells, Stockholm, Sweden, 1991

Intl. Natural Killer Workshop, St. Petersburg, FL, 1992

Society of Natural Immunity Meeting, "The NK Cell and Its Interaction with Immune and Non-immune Cells", Taormina, Italy, 1994

NK Cell Workshop at the 9th International Congress of Immunology, San Francisco, CA, 1995

Intl. NK Cell Workshop, Channel Islands, CA, 1995
 "Potential Impact of an Immunomodulator for Treatment of Viral Infections", Pfizer, Groton, CT, 1996
 Intl. Congress on Cytokines, Belo Horizonte, Brazil, 1996
 NK Symposium, Immunology and Biochemical British Societies, Harrogate, UK, 1996
 4th Intl. Congress on Immune Consequences of Trauma, Shock and Sepsis, Munich, Germany, 1997
 3rd Clinical and Fundamental Immunology Meeting, Marseilles, France, 1997
 Intl. NK Cell Workshop, Helsinki, Finland, 1997
 Gordon Conference on "Viruses and Cells", Tilton School, NH, 1997
 Chairperson for "Innate Immunity in Early Life Session", Intl. Symposium on Immunity in Early Life, Sponsored by the Marcel Mérieux Foundation and the WHO, Annecy, France, 1997
 Seventh Intl. Conference on Lymphocyte Activation and Immune Regulation, "Molecular Determinants of Microbial Immunity", Newport Beach, CA, 1998
 3rd Immunoparasitology Meeting, Woods Hole, MA, 1999
 15th Intl. Congress of the Society for Leukocyte Biology, "Innate Resistance to Infection", Cambridge, UK, 1999
 6th Annual Meeting of the Society for Natural Immunity and the 18th Intl. Natural Killer Cell Workshop, Carry-Le-Rouet, France, 2000
 Gordon Intl. Research Conference on "Chemotactic Cytokines", Meriden, NH, 2000
 3rd Intl. Symposium on NeuroVirology, San Francisco, CA, 2000
 11th Intl. Congress of Immunology, Stockholm, Sweden, 2001
 Intl. Society for Interferon and Cytokine Research Meeting, Cleveland, OH, 2001
 Joint Meeting of the Intl. Cytokine Society and the Society for Leukocyte Biology, Maui, Hawaii, 2001
 13th International Histocompatibility Workshop and Conference, Symposium on "Natural Killer Cells. The Interface between Innate and Adaptive Immunity", Seattle, WA, 2002
 Joint Meeting of the International Cytokine Society, the European Cytokine Society, and the Society for Leukocyte Biology, Torino, Italy, 2002
 Intl. Society for Interferon and Cytokine Research (ISICR) Meeting, Cairns, Australia, 2003
 12th Intl. Congress of Immunology, and 4th Annual Conference of Federation of Clinical Societies (FOCIS), Montreal, Canada, 2004
 Joint Meeting of the Intl. Cytokine Society (ICS) and the Intl. Society for Interferon and Cytokine Research Meeting (ISICR), "Cytokines in Cancer and Immunity", San Juan, Puerto Rico, 2004
 Gordon Research Conference on Viruses and Cells, Il Ciocco, Lucca, Italy, 2005
 10th Intl. Cytomegalovirus/Betaherpesvirus Workshop, Williamsburg, VA, 2005 (*sent representative from group*)
 5th Annual Meeting of the Federation of Clinical Societies (FOCIS), Boston, MA, 2005
 Irish Society for Immunology Meeting, Dublin, Ireland, 2005
 Society for Natural Immunity (SNI) Meeting, Kauai, Hawaii, 2005
 European Network of Immunology Institutes, PhD Summer School "Immunity to Infections and Inflammation", Sardinia, Italy 2006
 13th Intl. Congress of Immunology, Rio de Janeiro, Brazil, 2007 (*scheduled*)
 Intl. Society for Interferon and Cytokine Research Meeting Anniversary Meeting, Oxford, UK, 2007 (*scheduled*)

National

Federation of American Societies for Experimental Biology (FASEB) Meeting, Las Vegas, NV, 1988
 Leukemia Society of America's 4th National Symposia, New Orleans, LA, 1988
 MacArthur Foundation Research Program Collaborative Meeting, Stamford, CT, 1990
 Minisymposium on "Natural Killer Cells", ASBMB/AAI Meeting, New Orleans, LA, 1990
 NIH Conference on "The Role of T Cell Subsets and Cytokines in the Regulation of Infection", NIH, Bethesda, MD, 1991
 Keystone Symposium on "Molecular Immunology of Virus Infection", Taos, NM, 1993

Minisymposium on "Natural Killer Cells", EB/AAI Meeting, Anaheim, CA, 1994
 Keystone Symposium on "Molecular Aspects of Viral Immunity", Keystone, CO, 1995
 Experimental Biology '95, Atlanta, GA, 1995
 Vaccines and Immunotherapy of Infectious Diseases Minisymposium, Experimental Biology '95, Atlanta, GA, 1995
 NIH Conference on "Interleukin-12 and Infection: Prospects for Prophylactic Therapeutic Intervention", Bethesda, MD, 1995
 Control of Cytokine Gene Expression In Vivo Minisymposium, AAI Meeting, New Orleans, LA, 1996
 FASEB Summer Research Conference on "Principles in Viral, Bacterial, Fungal & Protozoan Pathogenesis", Snowmass Village, CO, 1996
State-of-the-Art Speaker, American Society for Virology, London, Canada, 1996
 Keystone Symposium on "Cellular Immunology and the Immunotherapy of Cancer", Copper Mountain, CO, 1997
 AIDS Vaccine Evaluation Group, Nashville, TN, 1997
 Keystone Symposium on "Molecular Aspects of Viral Immunity", Tamarron, CO, 1998
 American Society for Microbiology, Atlanta, GA, 1998
 Keystone Symposium on "Cellular Immunology and the Immunotherapy of Cancer", Santa Fe, NM, 2000
 Keystone Symposium on "Cytokines and Disease", Snowbird, UT, 2000
 Symposium on "Mechanisms of Extracellular Signal Integration in the Regulation of Leukocyte Function", AAI/CIS Joint Annual Meeting, Seattle, WA, 2000
 Society for Leukocyte Biology Meeting on "Interactions of Innate and Acquired Immunity", Cambridge, MA, 2000
 Keystone Symposium on "Interfaces Between Innate and Adaptive Immunity", Keystone, CO, 2001
 Keystone Symposium on "Molecular Aspects of Viral Immunology", Keystone, CO, 2001
 Keystone Symposium on "Molecular and Cellular Biology of Leukocyte Regulatory Receptors", Lake Tahoe, CA, 2002
 American Society for Microbiology (ASM) Conference on "Immunity to Bacterial, Viral, and Protozoal Pathogens, Savannah, GA, 2002
 NIAID Conference on "Dendritic Cells at the Host Pathogen Interface", Warrenton, VA, 2002
 Experimental Biology Meeting, New Orleans, LA, 2002
 The Society for Natural Immunity Symposium on "Signal Transduction during NK Cell Activation", and The Intl. Society for Interferon and Cytokine Research Symposium on "Biological Consequences of IFN Signaling"
 21st Annual Meeting of the American Society for Virology, Plenary Session on "Innate and Adaptive Immunity", Lexington, KY, 2002
 FASEB Research Conference on Lymphocytes and Antibodies, Snowmass, CO, 2002
 Keystone Symposium on "Chemokines and Chemokine Receptors", Breckenridge, CO, 2003
 Keystone Symposium on "Linking Innate and Adaptive Immune Responses", Taos, NM, 2003
 Keystone Symposium on "Twenty Years of HIV Research: From Discovery to Understanding", Bamff, Canada, 2003
 Symposium on "Physiology of the Human Immune Response: 60 Years of Progress", AAI Meeting, Denver, CO, 2003
 Major Symposium on "Mechanisms Underlying Initiation of Innate Immune Responses", AAI Meeting, Denver, CO, 2003 **Symposium Chair**
 PsychoNeuroImmunology Research Society, Amelia Island Plantation, FL, 2003
 Keystone Symposium on "Lymphocyte Activation and Signaling", Steamboat Springs, CO, 2004
 Keystone Symposium on "Jaks and Stats: Development to Disease", Whistler, BC, Canada, 2004
 Keystone Symposium on "Innate Responses to Pathogens", Steamboat Springs, CO, 2005
Meeting Co-organizer

- Keystone Symposium on "Dendritic Cells at the Center of Innate and Adaptive Immunity: Eradication of Pathogens and Cancer and Control of Immunopathology", Vancouver, Canada, 2005
- Keystone Symposium on "Cytokines, Disease, and Therapeutic Intervention", Santa Fe, NM, 2005
- Keystone Symposium on "Pathogen-Host Standoff: Persistent and Latent Infection", Keystone, CO, 2006
- Keystone Symposium on "Innate Immunity", Banff, Canada, 2006
- American Society for Microbiology (ASM) Biodefense Research Meeting, Washington, D.C., 2006 **Plenary - Keynote Speaker**
- Keystone Symposium on "Viral Immunity: From Basic Mechanisms to Vaccines", Steamboat Springs, CO, 2006
- American Association for Immunology (AAI) Meeting, The Intl. Society for Interferon and Cytokine Research Symposium, Boston, MA, 2006
- Keystone Symposium on "Immunological Memory", Santa Fe, NM, 2007
- Single Topic Conference sponsored by the American Association for the Study of Liver Diseases (AASLD) on "Mechanisms of Action of Interferon and Ribavirin in Hepatitis C", Chicago, IL 2007
- Gordon Research Conference, Ventura, CA, 2007
- American Association for Immunology (AAI) Meeting, The Society of Leukocyte Biology Symposium, Miami, FL, 2007

Regional

- Autumn Immunology Conference, Chicago, IL, 1998
- Keynote Speaker**, Weber Immunology Retreat, Heber, UT, 2000
- New England Immunology Conference, Woods Hole, MA, 1991, 1999 and 2002
- Keynote Speaker**, Upstate New York Immunology Conference, Sagamore, NY, 2004
- Keynote Speaker**, Colorado Immunology Meeting, 2006

Invited Seminars

- 1984 - Central Laboratory of the Netherlands, Red Cross Blood Transfusion Center, Amsterdam, The Netherlands
- 1986 - Southwestern Medical School, University of Texas HSC, Dallas, TX; Duke University, Durham, NC
- 1988 - NCI, Frederick, MD; New England Biology Teachers Conference, Providence, RI
- 1987 - Holy Cross College, Worcester, MA
- 1989 - Lady Davis Institute for Medical Research, McGill Univ., Montreal, Canada
- 1990 - Case Western Reserve University, Cleveland, OH; Univ. of Florida, Gainesville, FL
- 1991 - Pediatric Grand Rounds, Memorial Hospital of Rhode Island
- 1992 - Tumor Biology Course, Harvard Medical School, Boston, MA (86-92); New York Univ., New York, NY; Thomas Jefferson Medical School, Philadelphia, PA
- 1993 - Infectious Disease Rounds, Brown Univ., Providence, RI; Grand Rounds, Rhode Island Hospital, Providence, RI
- 1995 - Marshall Univ. School of Medicine, Huntington, WV - **Visiting Scholars Seminar**; New York Hospital-Cornell Univ. Medical Center, New York, NY; Univ. of Utah School of Medicine, Salt Lake City, UT; Tufts Univ. School of Medicine, Boston, MA
- 1994 - North Shore Univ. Hospital-Cornell Univ. Medical College, Manhasset, NY; UCLA School of Medicine, Los Angeles; Pfizer Central Research, Groton, CT (+90)
- 1996 - Univ. of North Carolina, Chapel Hill, NC; Johns Hopkins Medical School, Baltimore, MD (+89); DNAX, Palo Alto, CA
- 1997 - Univ. of Zurich, Switzerland; Genetics Institute, Cambridge/Andover, MA (+91, 95-97); Fox Chase Cancer Inst., Philadelphia, PA (+85); Univ. of Texas Health Science Center, San Antonio, TX; Univ. of Toronto, Ontario, Canada; Univ. of Pittsburgh School of Medicine, Pittsburgh, PA; Washington Univ. School of Medicine, St. Louis, MO

- 1998 - Pennsylvania State Univ., University Park, PA; Rush Medical College, Chicago, IL; Univ. of Loyola Medical School, Maywood, IL (+87); Univ. of Tennessee, Knoxville, TN; Dartmouth Medical School, Hanover, NH (+87); Rhode Island College, Providence, RI; Boston Univ. School of Medicine, Boston, MA; Louisiana State Univ. School of Medicine, Shreveport, LA - **Visiting Professor**; Univ. of Massachusetts, Amherst, MA (+92)
- 1999 - Allergy/Immunology Grand Rounds, Brown Univ., Providence, RI; Emory Univ. School of Medicine, Atlanta, GA; FDA, Bethesda, MD; David Axelrod Inst., Albany, NY; Roswell Park Cancer Inst., Buffalo, NY (+95); La Jolla Inst., La Jolla, CA; Univ. of Cambridge, England; Univ. of Glosgow, Scotland
- 2000 - Ohio State Univ., Columbus, OH (+96); Schering-Plough Laboratory for Immunological Research, Dardily Cedex, France; Univ. of Alabama School of Medicine, Birmingham, AL (+90); Beth Israel Hospital, Harvard Medical School, Boston, MA (+92); Methods of Clinical Investigation, Rhode Island Hospital, Providence, RI
- 2001 - Univ. of Connecticut Health Center, Farmington, CT (+96); Stanford University, Stanford, CA; University of California, San Francisco, CA; Univ. of Pennsylvania, Philadelphia, PA (+97); Skirball Inst. of Biomolecular Medicine, New York University Medical Center; Massachusetts General Hospital, Harvard Medical School, Charleston, MA (+95)
- 2002 - NIH, Bethesda, MD (+96, 97, 00); University of Texas, Southwestern Medical School, Dallas, TX; Institut Pasteur, Paris, France; University of Texas Medical Branch, Galveston, TX
- 2003 - McGill University, Montreal, Canada; Biogen, Cambridge, MA; Mayo Clinic, Rochester, MN; Univ. of Massachusetts Medical School, Worcester, MA (+92, 95); Cincinnati Children's Hospital Research Foundation, **Distinguished Lecturer in Immunology**, Cincinnati, OH
- 2004 - Marine Biological Laboratories (MBL), Woods Hole, MA; Scripps Research Institute, La Jolla, CA; University of Colorado Health Science Center, Denver, CO; Karolinska Institute, Stockholm, Sweden (+00); Harvard Medical School Immunology Seminar Series, Boston, MA; Cleveland Clinic Foundation, Cleveland, OH (+98, 01); Trudeau Institute, Saranac Lake, NY; Washington University, Seattle, WA, 2004
- 2005 - University of British Columbia, Vancouver, Canada; Cornell University/Rockefeller University Virology Course, New York, NY (+03); Tri-Institute Immunology Seminar Series, New York, NY; Wistar Institute, Philadelphia, PA; Louisiana State Univ. School of Medicine, Shreveport, LA - **Visiting Professor**
- 2006 - Ohio State University, Columbus, OH - **CMIB Host-Pathogen Seminar Series**; UMDNJ - Robert Wood Johnson Medical School, Piscataway, NJ; Centre d'Immunologie de Marseille-Luminy, Marseilles, France; University of Calgary, Canada; University of Alberta, Canada
- 2007 - Charles Gould Easton Seminar Series, University of Toronto, Toronto, Canada; University College Dublin, St. Vincent's University Hospital, Dublin, Ireland

Research Grants**Active Funding**

NIH Grant NCRR 1S1RR021051NIH; Shared Instrument Grant: BD FACSAria Flow Cytometer; 2007-08; (PI. L. Brossay) co-Principal Investigator; Direct Costs \$402,975; 0% effort.

NIH Grant RO1-CA(AI)41268 (19-23); Natural Killer Cell Growth and Development; 5/1/04-4/30/09; Principal Investigator; Direct Costs - \$1,150,000/5yr (+full indirect cost recovery to institution); 35% effort. (5th percentile score) (This grant has been continuously funded since 1985, and awarded after each of the 5 consecutive 1st submissions.)

NIH Grant RO1-AI55677 (01-05); Type 1 IFN Function and Signaling in Immunity to Viruses; 06/15/03-11/30/07; Principal Investigator; Direct Costs - \$1,125,000/4.5yr (+full indirect cost recovery to institution); 30% effort. (3rd percentile score)

U.S. Dept. Education GAANN (1-3 1st renewal); Ph.D. Training in Pathobiology of Infectious Disease and Host Responses: A Multidisciplinary Program in Biology; 7/1/03-6/30/06 (Extension through 07); Grant to Brown University Graduate Program in Pathobiology (PI - N. Thompson); Research Director and Co-Principal Investigator; Direct Costs - \$371,535; 0% effort.

U.S. Dept. Education GAANN (1-3 2nd renewal); Ph.D. Training in Pathobiology of Infectious Disease and Host Responses: A Multidisciplinary Program in Biology; 8/14/06-8/13/09; Grant to Brown University Graduate Program in Pathobiology; Research Director and Principal Investigator; Direct Costs - \$380,016; 10% effort.

Award and Funding History

Leukemia Society of America Fellowship; 7/1/81 - 6/30/83; Salary Award; Direct Costs - \$30,000/2yr.

American Cancer Society Institutional Grant #IN-129; Blastogenesis and Proliferation of Natural Killer Cells *In Vivo*; 1983; Principal Investigator; Direct Costs - \$5,820/1yr.

University of Minnesota Foundation Trust; 1984; Award of \$400.

Leukemia Society of America Special Fellowship; 7/1/83 - 6/30/85; Salary Award; Direct Costs - \$37,000/2yr.

American Association of Immunologist Travel Grant To Attend International Congress of Immunology, 1986, Award of \$250.

NIH Grant RO1-CA34461; Regulation of Natural Killer Cells; 5/1/83-11/30/87; Co-Investigator; Direct Costs - \$319,233/4.5yr.

American Cancer Institution Grant #IN-45; *In Vivo* Activation and Function of T Cells Bearing $\gamma\delta$ Receptors; 7/1/88-6/30/90; Principal Investigator; Direct Costs - \$7,500/2yr.

Leukemia Society of America Scholar Award; Blastogenesis and Proliferation of Natural Killer Cells; 12/1/86-11/30/91; Salary Award; Direct Costs - \$216,000/5yr.

Genetics Institute, Inc.; Effects of mL-12 on the Response to and Susceptibility to Experimental Viral Infections; 10/12/92-1/11/93; Principal Investigator; Direct Costs - \$6,871/0.25yr.

MacArthur Foundation Research Program, Brain, Behavior and Immunity Network Sub-project; Consequences of Stress on Susceptibility to Viral Infections; 8/1/91-12/31/94; Project Director; Direct Costs - \$187,661/3.4yr.

NIH R01-CA(AI)55726 (01-03)(+1yr); Control of NK & T Cells by TGF- β s During Viral Infection; 4/1/92-3/31/96; Principal Investigator; Direct Costs - \$314,868/3yr.

NIH Grant U19-AI44644 (01-04); Transplantation Tolerance: Costimulation, Cytokines & Chimerism; 9/1/98-8/31/02; Grant to Emory University School of Medicine (PI - C. Larsen); Principal Investigator of Project Subcontract to Brown University; Total Costs for Subcontract - \$616,531/4yr.

U.S. Dept. Education GAANN P200A000117 (1-3); Ph.D. Training in Pathobiology of Infectious Disease and Host Responses: A Multidisciplinary Program in Biology; 8/15/00-8/14/03; Grant to Brown University Graduate Program in Pathobiology (PI - N. Thompson); Research Director and Co-Principal Investigator; Direct Costs - \$459,000.

NIH Grant R01-MH47674 (04-12); Adrenal Steroid-Immune Interactions in Viral Infections; 7/1/94-6/30/03; Grant to Emory University School of Medicine (PI - A. Miller); Principal Investigator of Subcontract to Brown University; Total Costs for Subcontract - \$1,291,540/9yr.

NIH Grant R01-CA(AI)41268 (01-18); Natural Killer Cell Growth and Development; 12/1/85-4/30/04; Principal Investigator; Direct Costs - \$2,801,281/18yr; 35/40% effort.

NIH Grant P20 RR15578 (01-05); Center for Genetics and Genomics; 10/1/00-8/31/05; COBRE Grant to Brown University (PI - J. Sedivy); Principal Investigator of Project A - Characterization of Events Regulating the Balance Between Resistance and Infection; Direct Costs for Project A - \$913,000/5yr; 5% effort.

Honors

Fellow of the Leukemia Society of America, 1981-83
Special Fellow of the Leukemia Society of America, 1983-85
Outstanding Young Women of America, 1987
Scholar of the Leukemia Society of America, 1986-91
M.A. ad eundem, 1991, Brown University
Brintzenhoff Professor of Medical Sciences, 1996, Brown University
Shibley Symposium Speaker, Harvard Medical School, 2001
Elected Fellow of the American Association for the Advancement of Science (AAAS), 2002
Anderson Symposium Speaker, University of Virginia, 2005

Advisory Boards

Appointment Member of External Scientific Advisory Board, Trudeau Institute, Saranac Lake, NY, 2004-present

Grant Reviews - Study Sections

American Cancer Society Institutional Grant Committee (UMASS), 1987
Ad Hoc Reviewer for NIH Experimental Immunology Study Section, 1987-89
Member Special NIH Immunological Science Study Section, 1989
Ad Hoc Reviewer for NIH AIDS & Related Research Study Section 3, 1990
Appointed Member of NIH AIDS & Related Research Study Section 3, 1991-93
Site Visit Review for NCI, 1994
Appointed Member of the NIH Experimental Immunology Study Section, 1993-97
Special Reviews for NIH, 1987-2005
Site Visit Review for the Science Foundation of Ireland, 2007

Board for NIH

Board of Scientific Counselors (BSC) - Subcommittee 2 - Basic Sciences, of the National Cancer Institute (NCI) (Overseeing Entire Intramural Program), October 30, 2005-June 30, 2010

Special Task Forces for NIH

Contributor to Division of Allergy, Immunology & Transplantation (DAIT), National Institute of Allergy and Infectious Diseases (NIAID) of the National Institutes of Health (NIH)
Immunology Task Force Report on Future Research Directions, 1998
Immunological Sciences (IMM) Working Group, NIH Center for Scientific Review, 2000
Reviewer for National Research Council of the National Academies Report to NIH on "Treating Infectious Diseases in a Microbial World", 2006

Service To Profession

Meetings

Co-Chairman for NK Cell Symposium at National AAI Meeting, New Orleans, LA, 1990
Co-Chairman for NK Cell Symposium at National AAI Meeting, Anaheim, CA, 1994
Co-Chairman for Vaccines and Immunotherapy of Infectious Diseases, Minisymposium at Experimental Biology Meeting, Atlanta, GA, 1995
Co-Chairman for NK Cell Workshop at the Ninth International Congress of Immunology, San Francisco, CA, 1995
Chairman for Session on "NK Cell Recognition", New England Immunology Conference, Woods Hole, MA, 1995
Program Chairman for the New England Immunology Conference, 1991-96
Co-Chairman for Control of Cytokine Gene Expression In Vivo, Minisymposium at AAI Meeting, New Orleans, LA, 1996
Organization Committee for The New England Immunology Conference, 1989-97
Microbial Immunology Block Co-Chairman for AAI Meetings, 1997-99
Co-Chairman for NK Cell Minisymposium at AAI Meeting, Seattle, WA, 2000

Program Committee for AAI Meetings, 1998-2001
Co-Chair for CNS Infection and Immune Response Plenary Session and Cytokines Workshop,
6th Intl. Congress of Neuroimmunology, Edinberg, Scotland, 2001
Program Co-Chair, 7th Annual Meeting of the Society of Natural Immunity and 19th Intl.
Natural Killer Cell Workshop, San Juan, Puerto Rico, 2000-02
Chair for The International Society for Interferon and Cytokine Research Symposium on
"Biological Consequences of IFN Signaling", Experimental Biology Meeting, New Orleans, LA,
2002
Co-Chair for The Society for Natural Immunity Symposium on "Signal Transduction during NK
Cell Activation", Experimental Biology Meeting, New Orleans, LA, 2002
Elected member of AAI Nominating Committee, 2002-03
Chair for the Major Symposium on "Mechanisms Underlying Initiation of Innate Immune
Responses", AAI Meeting, Denver, CO, 2003
Co-Chair and Discussion Leader, Session on "Stress, Interferon, and Innate Immune Responses:
Getting Started", Animal Cells and Viruses Gordon Research Conference, Il Ciocco, Barga,
Italy, 2003 (*participated in organization but did not attend meeting*)
Panel on Women in Science at the ISCIR Meeting, Australia, 2003
Co-Chair Innate Immunity Workshop, Meeting on Cytokines in Cancer and Immunity, San Juan,
Puerto Rico, 2004
**Co-Organizer for the Keystone Symposium on "Innate Immunity to Pathogens",
Steamboat Springs, CO), 2003-05**
Elected to Awards Committee, American Association of Immunologists, 2007-2010

Journals

Reviewer for Journals, 1982-present
*American Journal of Pathology, Blood, Cancer Research,
Clinical Immunology and Immunopathology, Immunity,
Immunology Letters, International Immunology, Journal of Clinical Investigation,
Journal of Experimental Medicine, Journal of General Virology,
Journal of Immunology, Journal of Infectious Diseases,
Journal of Leukocyte Biology, Journal of Virology, Nature,
Natural Immunity and Cell Growth Regulation/Natural Immunity, Nature Genetics,
Nature Immunology, Nature Medicine, New England Journal of Medicine,
Proceedings of the National Academy of Sciences, USA, Science, and Virology*
Associate Editor for the *Journal of Immunology*, 1990-94
Editorial Board of *Natural Immunity*, 1994-98
Board of Editors for *Proceedings of the Society for Experimental Biology and Medicine*,
1993-99
Section Editor for the *Journal of Immunology*, 1995-99
Section Editor for the *Journal of Leukocyte Biology*, 1999-2001
Editorial Board of *Virology*, 2001-06
Advisory Editor for the *Journal of Experimental Medicine*, 2002-present
Editorial Board for *Immunity*, 2005-present

Professional Organizations

American Association of Immunologists; American Society for Virology;
Sigma Xi, Scientific Research Society; American Association for the Advancement of Science;
Society of Leukocyte Biology; Society of Natural Immunity;
Intl. Society for Interferon and Cytokine Research; American Society for Microbiology;
Association of Medical School Microbiology and Immunology Chairs;
New York Academy of Sciences

Biographical Listings

- Who's Who of American Women, 17th through 26th Editions, 1991-2007
- Who's Who in the East, 24th through 30th Editions, 1993-2003
- Who's Who in Medicine and Healthcare, 1st & 2nd Editions, 1997-2000
- Who's Who in America, 51st through 61th Editions, 1997-2007
- Who's Who in the World, 16th through 21th Editions, 1999-2004
- Who's Who in Science and Engineering, 7th Edition, 2003-2004
- Who's Who in American Education, 6th Edition, 2004-2005

Honors and Awards Received by Students and Trainees**Post-Doctoral Fellows, Instructors, and Assistant Professors**

- Thais P. Salazar-Mather, Ph.D., 1993-2003
 - NIH Minority Supplement Research Award Recipient, 1996-98
 - Best Postdoctoral Research Presentation, Seventeenth International Natural Killer Cell Workshop/Fifth Meeting of the Society for Natural Immunity, 1998
 - Recipient of NIH KO1 Mentored Career Development Award for Members of Underrepresented Groups, 1998-2003 **C.A. Biron - Mentor**
- Marc Dalod, Ph.D., 2000-2002
 - Association pour la Recherche sur le Cancer (ARC) Fellowship Award Recipient, 2000-01
 - Cancer Research Institute Fellowship Award Recipient, 2001-02
- M. Pilar Gil, Ph.D., 2003-present
 - Rhode Island Foundation Grant Recipient, 2004
- Seung-Hwan Lee, Ph.D., 2004-present
 - Canadian Institutes of Health Research Fellowship Award Recipient, 2004-07 - **C.A. Biron - Mentor**
- Takuya Miyagi, M.D., Ph.D., 2005-07, Shinya Foundation Support, 2005
- Wen-Ming Chu, M.D., Ph.D., 2001-present
 - Leukemia & Lymphoma Society Scholar Award Recipient, 2006-2011
 - C.A. Biron - Sponsor**

M.D./Ph.D. Thesis Students

- Jordan S. Orange, 1992-97
 - Brown University Chapter of Sigma Xi Medical Research Award, 1993
 - Rhode Island Foundation Medical Research Grant, 1994-95
- Helen C. Su, 1990-98
 - Brown University Chapter of Sigma Xi Medical Research Award, 1991
 - Howard Hughes Medical Institute Pre-Doctoral Fellow, 1992-96
 - Brown University Chapter of Sigma Xi Graduate Research Award, 1998
- Gary C. Pien, 1995-2002
 - Brown University Chapter of Sigma Xi Medical Research Award, 1998
 - Howard Hughes Medical Institute Predoctoral Fellowship Award Recipient, 1997-2001
 - AAAI Crystals Project Award, 1999
 - Society for Leukocyte Biology Presidential Award, 1st Place (Shared with K. Nguyen), 1999

Ph.D. Thesis Students

- Leslie P. Cousens, 1994-99
 - International Cytokine Society Outstanding Scholar Award, 1998
- Khuong (Ken) B. Nguyen, 1996-2002
 - New England American Cancer Research Meeting Poster Presentation Award, 1998
 - Society for Leukocyte Biology Presidential Award, 1st Place (Shared with G. Pien), 1999
 - Brown University Joukowsky Family Foundation Outstanding Dissertation Award in Biological Sciences, 2002

- Rachelle Salomon, 2000-04
NRSA Predoctoral Fellowship Award, 2000-04
- Jennifer Louten, 2001-06
NDSEG Predoctoral Fellowship Award, 2002-05

Undergraduate Independent Study and Senior Honors Students

- Helen C. Su, Brown University PLME Program, Milton Hamolsky Prize in Natural Sciences, 1990
- Shuba Kamath, Brown University PLME Program, Milton Hamolsky Prize in Natural Sciences, 1996
- Tanya Hamilton, Brown University, Biology Prize, 2003

Visiting Foreign Graduate Student

- Lene Malmgaard, Visiting from the University of Aarhus, Denmark, Awards from The Forskningsstyrelsen and The Knud Højgaards Fond Danish Research Agencies, 2000

Brown University Service

Research Service

Establishment and Maintenance of an Immunodeficient Mouse Breeding Colony
Associate Director of the Flow Cytometer Facility and Member of Flow Cytometry
Supervisory Committee, 1988-93
Coordinator of Immunology Seminar Series, 1988-89, 1991-93
Member Bio-Safety Committee, 1990-2000
Member Animal Users Committee, 2007-

Faculty Search Committees and Administrative Activities

Member Search Committee for Faculty Position in Infectious Diseases, Spring 1988-
Fall 1988
Member MCB Virology Faculty Search Committee, 1988-89
Member of Pathology Faculty Search Committee, 1989-90
Member Search Committee for Dean of Biological Sciences, Spring 1991
Member of Committee to Search for Director of the Bone Marrow Transplantation
Unit at the Roger Williams Hospital, 1991-92
Participant of Faculty Development Workshop for Women Medical Faculty, Fellows, &
Residents, 1993
Member of Search Committee for Faculty Position in Rheumatology, 1993-94
Member of Division Faculty Promotion Committee, 1993-94
Member of Committee to Search for Faculty in the Bone Marrow Transplantation
Unit at the Roger Williams Hospital, 1994-95
Member of Search Committee for Chairman of Pathology, 1994-95
Member of Search Committee for Virology Faculty Position in MMI, 1994-95
Chair of Search Committee for Faculty Positions in MMI, 1996-99, 2000-01
Search Committee for the Post-Doctoral Training Program in the Department of
Pathology and Laboratory Medicine, 1998-99
Member of Sub-committee on Graduate Education in the Basic Sciences; Continuing
Medical Education; Research; and Basic Sciences for the Institutional Task Force in
Preparation for the AAMC's Liaison Committee on Medical Education Visit, 1996-97
Participation in the Negotiations Panel for Women in Medicine Workshop at Brown
University, 2003
Dean's Action Group/Search Committee for the New Position of Dean for Cross-
Disciplinary Sciences, Brown University, 2005-06

Medical Training and Teaching Service

Member Medical Committee on Academic Standing (MCAS), 1989-91
Member of Award and Prizes Subcommittee of the MCAS, 1989
R.W. Johnson Foundation Grant Task Force, 1990-92
Member of Medical Curriculum PLME Sub-Committee on Pre-clinical Years, 1991-94

Brown University Research and Scholarship Programs

Member Program Committee for Immunology, 1988-93
Member of the Brown University Cancer Center, 1990-95
Associate Member of the Brown University AIDS Program, 1990-present
Steering Committee, for the NIH-supported Center for Genetics and Genomics (PI - J.
Sedivy), 2000-05
Participant in the Working Group for the Center of Excellence Women's Leadership
Development Component of the NIH-supported National Center of Excellence in
Women's Health, (PI - M. Phipps), 2003-2007
Member of the Executive Committee and Trainer for the NIH-supported Training Program
in Trauma and Inflammation (PI - J. Albina), 2003-present
Trainer for the NIH-supported Training Program in Gastroenterology
(PI - J. Wands), 2003-present

Faculty Mentor for Assistant Professors/Instructors

- Lesley A. Doughty, M.D., 1998-2000, Assistant Professor of Pediatrics
(Fellowship Training - University of Pittsburgh, Pittsburgh, PA)
- Thais P. Salazar-Mather, Ph.D., 1999-2003,
Research Assistant Professor of Medical Sciences
(Fellowship Training - Brown University, Providence, RI)
- Laurent Brossay, Ph.D., 2000-present, Assistant Professor of Medical Sciences
(Fellowship Training - UCLA/La Jolla Institute, CA)
- George Yap, Ph.D., 2000-present, Assistant Professor of Medical Sciences
(Fellowship Training - NIH, Bethesda, MA)
- Wen-Ming Chu, M.D./Ph.D., 2001-present, Assistant Professor of Medical Sciences
(Fellowship Training - UCSD, La Jolla, CA)
- M. Pilar Gil, Ph.D., 2003-present, Instructor of Medical Sciences
(Fellowship Training - Wash. Univ. School of Medicine, St. Louis, MO)
- Richard Bennett, Ph.D., 2006-present, Assistant Professor of Biology
(Fellowship Training - Harvard University and University of California at San Francisco)

Graduate Training and Teaching Activities

Sponsor for Post-Doctoral Fellows/Instructors

- Marion T. Kasaian, Ph.D., 1987-89,
(Graduate Training - Case Western Reserve University, Cleveland, OH)
Current Position - Principal Scientist, Wyeth, Cambridge, MA
- Rika Ishikawa, Ph.D., 1990-93
(Graduate Training - Wright State University, Dayton, OH)
Following Position - Instructor, Hirosaki University, Hirosaki, Japan
- Melanie C. Ruzek, Ph.D., 1996-99,
(Graduate Training - University of Minnesota, Minneapolis, MN)
Current Position - Scientist, Genzyme, Framingham, MA
- Thais P. Salazar-Mather, Ph.D., 1993-99
(Graduate Training - Marshall University, Huntington, WV)
Current Position - Assistant Professor, Brown University
- Marc Dalod, Ph.D., 2000-2002
(Graduate Training - INSERM, Paris, France)
Current Position - INSERM, Université de la Méditerranée, Marseille, France
- M. Pilar Gil, Ph.D., 2003-*present*
(Graduate Training - University of Barcelona, Spain)
Post-Doctoral Training - Washington University School of Medicine, St. Louis, MO)
- Seung-Hwan Lee, Ph.D., 2004-*present*
(Graduate Training - University of Ottawa, Ottawa, Canada)
- Takuya Miyagi, M.D., Ph.D., 2004-2007
(Graduate and Medical Training - Osaka University School of Medicine, Japan)
Current Position - Osaka University School of Medicine, Japan
- Mickaël Ploquin, Ph.D., 2006-*present*
(Graduate Training - Pasteur Institute, Paris, France)

Advisor for M.D./Ph.D. Thesis Research

- Jordan S. Orange, "IL-12 in Viral Infections", 1992-97
[Ph.D. Degree Awarded 1996, M.D. Degree Awarded 1997]
(Undergraduate Training - Brown University, Providence, RI)
Pediatric Residency Training, Children's Hospital of Philadelphia,
University of Pennsylvania, Philadelphia, PA (97-00),
Fellow in Pediatric Allergy and Immunology at the Children's Hospital
and Harvard University School of Medicine, Boston, MA (00-03)
Current Position - Assistant Professor of Pediatrics, University of Pennsylvania
School of Medicine, Philadelphia, PA
- Helen C. Su, "Regulation and Immunoregulatory Functions of NK and T Cell
Responses During Acute Viral Infections", 1990-98
[M.D. and Ph.D. Degrees Awarded 1998]
(Undergraduate Training - Brown University, Providence, RI)
Pediatric Residency Training, St. Louis Children's Hospital,
Washington, University, St. Louis, MO (98-01)
Current Position - Immunology Fellow, NIH, Bethesda, MD
- Gary C. Pien, "Regulation of Innate and Adaptive IFN- γ Response by IL-18,
IL-12, and IFN- α/β ", 1995-2002 *[M.D. and Ph.D. Degrees Awarded 2003]*
(Undergraduate Training - Brown University, Providence, RI)
Pediatric Residency Training, Hasbro Children's Hospital,
Brown University, Providence, RI (03-06)
Current Position - Fellow in Pediatric Allergy and Immunology, Children's Hospital of
Philadelphia, University of Pennsylvania, Philadelphia, PA

Advisor for Graduate Research

- Michael J. Primiano, "Cytokine Regulation of and by NK Cells during Viral Infections", 1996-98 [*M.A. Awarded 2000 after Extended Leave*]
(Undergraduate Training - Boston College, Boston, MA)
- Leslie P. Cousens, "Cytokine Regulation of NK and T Cell IFN- γ Responses During Viral Infections", 1994-99 [*Ph.D. Awarded 1999*]
(Undergraduate Training - Providence College, Providence, RI)
Current Position - Research Assistant Professor, Roger Williams Hospital, Providence, RI
- Khuong (Ken) B. Nguyen, "Coordination of NK and T Cell Responses to Viral Infections by Type 1 Interferons" 1996-2002 [*Ph.D. Awarded 2002*]
(Undergraduate Training - Brown University, Providence, RI)
Following Position - Post-Doctoral Fellow, Harvard Medical School, Boston, MA
- Rachele Salomon, "Regulation of Type I Interferon Effects During Viral Infections by Altering Accessibility of Signal Transducer and Activator of Transcription Factors", 2000-04 [*Ph.D. Awarded 2005*]
(Undergraduate Training - University of Maryland, Baltimore County, MD)
Following Position - Post-Doctoral Fellow, St. Jude's Research, Memphis, TN
- Jennifer Louten, "Cellular and Structural Requirements for Type 1 Interferon Responses to Viral Infection", 2001-06
(Undergraduate Training - Rochester Institute of Technology, NY)
Following Position - Post-Doctoral Fellow, DNAX, Palo Alto, CA

Advisor for Visiting Foreign Graduate Student Research

- Philipp Osterloh, "Effects of Interferons on T Cell Responses to Particular Viral Peptides", Visiting from the University of Tuebingen, Germany, 2000
- Lene Malmgaard, "Characterization of Specific Interferon α/β Responses to Viral Infection", Visiting from the University of Aarhus, Denmark 2000-2001

Graduate Program Activities

- Member Molecular Cell and Biochemistry (MCB) Graduate Program Curriculum Committee, 1988-92
- Chairman MCB Graduate Program Curriculum Committee, 1989-91
- Member MCB Graduate Program, 1987-93
- Advisory Committees for MCB Ph.D. Students, (2 to 4 students per year), 1988-93
- Member of Pathobiology Graduate Program, 1990-present
- Member Pathobiology Graduate Program Admission Committee, 1991-94
- Chairman Pathobiology Graduate Program Admission Committee, 1991-93
- Advisory Committees for Pathobiology Ph.D. Students, (2 to 4 students per year), 1990-present
- Trainer Environmental Toxicology NIH Training Grant, 1993-2003
- Trainer GAANN Dept. of Education Grant, 2000-present
- Trainer Gastroenterology Training Grant, 2003-present
- Graduate Students on Rotation (\approx 20 total)

Member of Ph.D. Advisory and Thesis Committees

- Blake E. Tomkinson, "The Cellular Immune Response to Epstein-Barr Virus During Acute Infectious Mononucleosis", Ph.D., UMASS, 1988
- Lisa Christenson, "Polymer Encapsulated Thymic Stromal Tissue: Biocompatibility, Procurement and Functional Studies", Ph.D., Brown University, 1990
- Andrew H. Woo, "Brain-Immune System Interactions: Analysis of Immunoglobulin A In Cerebrospinal Fluid", Ph.D., Brown University, 1991
- Michael C. Newstein, "The Regulation of Human Immunodeficiency Virus Gene Expression by the Tat Protein", Ph.D., Brown University, 1992
- Li Yang, "Antigenic Analysis of Bile Duct Epithelium During Liver Development, Renewal and Carcinogenesis Using a Novel Monoclonal Antibody Defining a Bile Duct Antigen", Ph.D., Brown University, 1993
- Justina C. Wu, "Role of Transforming Growth Factor-Alpha in Mouse Hepatocyte Proliferation and Transformation", Ph.D., Brown University, 1995
- Michelle S. Santos, "Effect of β -Carotene on Elderly Immune Function: β -Carotene and Natural Killer Cell Activity in the Aged", Ph.D., Tufts University School of Nutrition, 1996
- Leslie B. Gordon, "The Cytolytic Response to P511 Mastocytoma Tumor Growth In Mouse Brain", Ph.D., Brown University, 1998
- Clas Une, "Studies of Natural Killer Cell Recognition and Activation", Ph.D., Karolinska Institute, Sweden, 2000 (*opponent*)
- Jennifer Eve Fenner, "Regulation of Type 1 Interferon", Ph.D., Monash University, Australia, 2003/04
- Scott Robbins, "Expression and Function of the KLRG1 Molecule on NK Cells and T Cells", Ph.D., Brown University, 2004
- Randy Longman, "Dendritic Cells Mediate the Dual Effects of $IFN\alpha\beta$ in HCV Immunity", Ph.D., Rockefeller University, New York, NY, 2005
- Michael Shaw, "Unraveling a Genetic Determinant of Infectious and Autoimmune Disease Susceptibility: Rediscovering Tyk2 and Its Role in Immunoregulation", Ph.D., Brown University, Providence, RI, 2006
- Yun Ling, "Denutition and Autophagic Elimination of Invading *Toxoplasma* in Primed Effector Macrophages", *M.S. Degree*, Brown University, Providence, RI, 2006
- April M. Shiflett, "Susceptibility and Resistance to Human TLF in African Trypanosomes", Ph.D., Brown University, Providence, RI, 2007
- Johnna D. Wesley, "Unraveling the Functional Significance of $V\alpha 14i$ NK T Cells", Ph.D., Brown University, Providence, RI, 2007
- Douglas Wilson, Pathobiology Graduate Program
- Rosa Jimenez, Student Pathobiology Graduate Program

Undergraduate Training and Teaching Activities

Program Activities

ScB Biology Advisor for Class of '95
Reader for Honors Theses

Advisor for Undergraduate Independent Study and Senior Honors Theses (Bio 195/196)

- Helen C. Su, "The Role of Transforming Growth Factor-Beta in Regulating the Proliferative Response of Natural Killer Cells and Cytotoxic T Lymphocytes During Acute Lymphocytic Choriomeningitis Virus Infections In Vivo", 1989-90
- Andrew T. Chan, "Inbred Strain Differences in Natural Killer Cell and T Lymphocyte Responses During Viral Infections", 1991-92
- Deana M. Theroux, "Consequences of Stress on the Susceptibility to Viral Infection", 1991-92
- Katherine B. Hisert, "Hematopoiesis, Cytokines, and Natural Killer Cells", 1993-95
- Shuba Kamath, "Interactions Between Neuroendocrine and Immune Systems during Viral Infection", 1995-96
- Tanya Hamilton, "DC Activation of NK Cells in MCMV: Roles of Cell-Cell Contacts", 2002-03
- Ashley Jenkins, "STAT2 and Its Role in Type 1 IFN Regulation", 2005-06

Brown Course Teaching

Immunology Section of Medical Microbiology (Bio 158)
Advanced Immunology (Bio 253 and Bio 254 now 264)
 Viral Immunology, Immunology of Infectious Diseases, Lymphocyte Differentiation
Graduate Tutorial in Immunology Research - Natural Killer Cells (Bio 273 and Bio 293)
Molecular Basis of Disease (Bio 283)
Introduction to Faculty Research (Bio 285)
Workshop for Immunology Seminar Series
Lecture in Immunology Review Courses for Residents and Medical Fellows
Seminar for Family Practice Physicians
Lectures in Immunology (Bio 53)