

CURRICULUM VITAE

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Degrees

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

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
May 2010 - June 2010	Visiting Professor, Trinity College, Dublin, Ireland
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 - 2009	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, 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 and genes to shape the downstream consequences of ligand 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) Conditioning of Immune Cell Subsets to Intrinsically Alter Innate Cytokine Responses** - They have demonstrated that the signal transducer and activator of transcription 1 (STAT1) is required for certain, but negatively regulates other potential, type 1 IFN immunoregulatory effects, and that total STAT1 protein levels are dynamically regulated during the course of endogenous viral infection with accompanying changes in type 1 IFN activation of other STAT molecules. NK cells are uniquely predisposed to respond to type 1 IFN with STAT4 activation because they uniquely express high basal levels of the molecule. In contrast, CD8 T cells are stimulated, through their T cell receptors for antigen, to have elevated STAT4 levels and type 1 IFN activation of pSTAT4. Moreover, the work has shown that NK cell proliferation is associated with histone modifications to shift NK cell responses from antimicrobial and immune enhancing to include negative immunoregulatory functions resulting from IL-10 production. Thus, endogenous pathways are intrinsically regulated, by changes in the levels of individual signaling molecules and in gene responsiveness for expression, 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 career citations at 25,852 with an h-index of 77 and an i10-index of 129 as calculate by Google Scholars in October 2018.)

Online (CD-ROM) Seminar Publications

1. **Biron, C.** (2009), "Type I interferons in innate immunity to viral infections", in Gordon, S. (ed.), *Innate Immunity: Host recognition and response in health and disease*, The Biomedical & Life Sciences Collection, Henry Stewart Talks Ltd, London
(online at <http://www.hstalks.com/?t=BL0612335-Biron>)

Editor

1. **Biron, C.A.** Immunity to Viruses Section, for *Encyclopedia for Immunobiology*. Michael Ratcliffe, ed. Elsevier, Oxford, UK, 2014-16, published 2016.

Editor for Theme Issues of Journal Publications

1. Medzhitov, R., and **C.A. Biron**, editors for the Special Issue on Innate Immunity in *Current Opinion in Immunology*. "Innate Immunity – Editorial Overview". *Curr. Opin. Immunol.* **15**:2-4, 2003.
2. **Biron, C.A.**, and C.M. Rice, editors for the Special Issue on Innate Immunity in *Current Opinion in Virology*. "Innate Immunity: Trolling, Responding and Protecting against Viral Infections – Editorial Overview". *Curr. Opin. Virol.* **1**:443-446, 2011.

Correspondence, Perspectives, Editorials, News and Views, Commentaries

1. **Biron, C.A.**, K.S. Byron, and J.L. Sullivan. Reappearance of natural-killer-cell activity – Reply. *New Eng. J. of Med.* **322**:133-134, 1990. *Correspondence*
2. Vivier, E. and **C.A. Biron**. A pathogen receptor on natural killer cells. *Science* **296**: 1248-1249, 2002. *Invited Perspective*
3. **Biron, C.A.** More things in heaven and earth: defining innate and adaptive immunity. *Nat. Immunol.* **11**:1080-1082, 2010. *Invited News and Views*
4. **Biron, C.A.** and A. Casadevall. On immunologists and microbiologists: ground zero in the battle for interdisciplinary knowledge. *mBio* **1**(5):00260-10. doi:10.1128/mBio.00260-10. *Editorial*
5. **Biron, C.A.** Yet another role for natural killer cells: Cytotoxicity in immune regulation and viral persistence. *Proc. Natl. Acad. Sci. USA* **109**:1814-1815, 2012. *Invited Commentary*
6. **Biron, C.A.** Glucocorticoids and NK cell PD-1. *Nat. Immunol.* **19**:908-910, 2018. *Invited News and Views*

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, pp. 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, pp. 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, pp. 21-41, 1983.
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, pp. 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, pp. 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, pp. 111-128, 1988.
7. Kasaian, M.T., and **C.A. Biron**. Expression of the IL-2 receptor during activation and proliferation of cytotoxic effector cells *in vivo*. In: Natural Killer Cell and Host Defense, E.W. Ades and C. Lopez, eds., Karger Publishing Corp., Basel, Switzerland, pp. 160-163, 1989.

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, pp. 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, pp. 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, pp. 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, PA, pp. 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, pp. 469-513, 2001.
14. **Biron, C.A.**, M. Dalod, and T.P. Salazar-Mather. Innate immunity and viral infections. In: Immunology of Infectious Diseases. S.H.E. Kaufmann, A. Sherr, and R. Ahmed, eds., American Society for Microbiology, pp. 139-160, 2002.
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, pp. 7-27, 2002.
16. **Biron, C.A.**, R. Salomon, and J.E. Durbin. Stats in immune responses to viral infections. In: Signal Transducers and Activators of Transcription (STATs). P.B. Segal, D.E. Levy, and T. Hirano, eds., Kluwer Academic Publishers, pp. 381-397, 2003.
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, pp. 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, pp. 59-71, 2007.
19. **Biron, C.A.** Type 1 interferon signaling in shaping cellular innate and adaptive immunity to viral infection. (Chapter 10) In: Cellular Signaling and Innate Immune Responses to RNA Viruses. A.R. Brasier, A. Garcia-Sastre, , and S.M. Lemon, eds. American Society for Microbiology, Washington, D.C., pp. 137-153, (total pages 454) 2009.
20. Miyagi, T., S.-H. Lee, and **C.A. Biron**. Intracellular staining for analysis of the expression and phosphorylation of signal transducers and activators of transcription (STATs) in NK cells. In: Second Edition - Natural Killer Cell Protocols. K. Campbell, ed. Humana Press, Inc., Totowa, NJ, and *Methods Mol Biol.* **612**:159-175, 2010.
21. Dalod, M., and **C.A. Biron**. Immunoregulatory cytokine networks discovered and characterized during murine cytomegalovirus infections. Chapter 11, Volume 2. In: CYTOMEGALOVIRUSES: From Molecular Pathogenesis to Therapy (2 volumes). M.J. Reddenhase, ed. Caister Academic Press, Norfolk, UK, pp. 232-258, 2013.
22. **Biron, C.A.** Innate immunity (Chapter 4). In: Third Edition Viral Pathogenesis - From Basics to Systems Biology. M.G. Katze, M.J. Korth, G.L. Law, and N. Nathanson, eds. Academic Press an imprint of Elsevier, London, UK, pp. 41-55, 2016.

23. Tarrio, M.L., and **C.A. Biron**. Innate Cytokine responses and their functions during viral infections. In: Encyclopedia of Immunobiology. M. Ratcliffe, ed. Elsevier, Oxford: Academic Press, UK, Vol. 4 pp. 222-234, 2016.
23. **Biron, C.A.**, and M. Altfeld. Is there natural killer cell memory and can it be harnessed by vaccination? - Can natural killer and CD8 T cells switch jobs? In: Immune Memory and Vaccines: Great Debates. S. Crotty, and R. Ahmed, eds. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NK, pp. 405-412, 2018. *Highlighted in Faculty of 1000.*

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.
3. **Biron, C.A.**, and R.M. Welsh. Blastogenesis of natural killer cells during viral infection *in vivo*. *J. Immunol.* **129**:2788-2795, 1982.
4. Bukowski, J.F., **C.A. Biron**, and R.M. Welsh. Elevated natural killer activity, plasma interferon, and tumor cell rejection in mice persistently infected with lymphocytic choriomeningitis virus. *J. Immunol.* **131**:991-996, 1983.
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.
6. **Biron, C.A.**, G. Sonnenfeld, and R.M. Welsh. Interferon induces natural killer cell blastogenesis *in vivo*. *J. Leukocyte Biol.* **35**:31-37, 1984.
7. LeBlanc, P.A., and **C.A. Biron**. Mononuclear phagocyte maturation: A cytotoxic monoclonal antibody reactive with post-monoblast stages. *Cell. Immunol.* **83**:242-254, 1984.
8. **Biron, C.A.**, S. Habu, K. Okumura, and R.M. Welsh. Lysis of uninfected and virus-infected cells *in vivo*: A rejection mechanism other than that mediated by natural killer cells. *J. Virol.* **50**:698-707, 1984.
9. Welsh, R.M., **C.A. Biron**, and J.F. Bukowski. The interplay between NK cells and virus infections. *Microbiology* **1984**:320-323, 1984.
10. Welsh, R.M., **C.A. Biron**, J.F. Bukowski, K.W. McIntyre, and H.Y. Yang. Role of natural killer cells in virus infections in mice. *Surv. Synth. Pathol. Res.* **3**:409-431, 1984.
11. **Biron, C.A.**, R.J. Natuk, and R.M. Welsh. Generation of large granular T cells during viral infections *in vivo*. *J. Immunol.* **136**:2280-2286, 1986.
12. **Biron, C.A.**, K.F. Pedersen, and R.M. Welsh. Purification and target cell range of *in vivo* elicited blast natural killer cells. *J. Immunol.* **137**:463-471, 1986.
13. Like, A.A., **C.A. Biron**, E.J. Weringer, K. Byman, E. Sroczynski, 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.
15. **Biron, C.A.**, K.F. Pedersen, and R.M. Welsh. Aberrant T cells in beige mice. *J. Immunol.* **138**:2050-2056, 1987.

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.
17. McIntyre, K.W., R.J. Natuk, **C.A. Biron**, K. Kase, J. Greenberger, and R.M. Welsh. Blastogenesis and proliferation of large granular lymphocytes in non-lymphoid tissues. *J. Leukocyte Biol.* **43**:492-501, 1988.
18. Kasaian, M.T., and **C.A. Biron**. The activation of interleukin-2 transcription in L3T4+ and Lyt-2+ lymphocytes during virus infection *in vivo*. *J. Immunol.* **142**:1287-1292, 1989.
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.
NEJM Editorial Review of This Article; Identified as a "Classic" in the Nature Immunology May 2008, Volume 5, Issue "Focus on Natural Killer Cells"
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.
21. Kasaian, M.T., and **C.A. Biron**. Effects of cyclosporin A on interleukin-2 production and lymphocyte proliferation during infection of mice with lymphocytic choriomeningitis virus. *J. Immunol.* **144**:299-306, 1990.
22. Kasaian, M.T., and **C.A. Biron**. Cyclosporin A inhibition of IL-2 gene expression but not NK cell proliferation following interferon induction *in vivo*. *J. Exp. Med.* **171**:745-762, 1990.
23. Kasaian, M.T., K.A. Leite-Morris, and **C.A. Biron**. The role of CD4+ cells in sustaining lymphocyte proliferation during lymphocytic choriomeningitis virus infection. *J. Immunol.* **146**:1955-1963, 1991.
24. Su, H.C., K.A. Leite-Morris, L. Braun, and **C.A. Biron**. A role for transforming growth factor- β 1 (TGF- β 1) in regulating natural killer cell and T lymphocyte proliferative responses during acute infection with lymphocytic choriomeningitis virus. *J. Immunol.* **147**:2717-2727, 1991.
25. Moyer, C.F., E. Huggins, S. Sarantopoulos, J. C. Lewis, D. Sajuthi, **C.A. Biron**, and C.L. Reinisch. Cloned endothelium derived from autoimmune vascular disease retain structural and functional characteristics of normal endothelial cells. *Exp. Cell Res.* **199**:63-73, 1992.
26. Ishikawa, R., and **C.A. Biron**. IFN induction and associated changes in splenic leukocyte distribution. *J. Immunol.* **150**:3713-3727, 1993.
27. Su, H.C., R. Ishikawa, and **C.A. Biron**. Transforming growth factor- β expression and natural killer cell responses during virus infection of normal, nude, and SCID mice. *J. Immunol.* **151**:4874-4890, 1993.
28. Orange, J.S., S.F. Wolf, and **C.A. Biron**. Effects of IL-12 on the response and susceptibility to experimental viral infections. *J. Immunol.* **152**:1253-1264, 1994.
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*
30. Wang, B., **C. Biron**, J. She, K. Higgins, M.-J. Sunshine, E. Lacy, N. Lonberg, and C. Terhorst. A block in both early T lymphocyte and natural killer cell development in transgenic mice with high copy numbers of the CD3- ϵ gene. *Proc. Natl. Acad. Sci. USA* **91**:9402-9406, 1994.
31. Su, H.C., J.S. Orange, L.D. Fast, A.T. Chan, S.J. Simpson, C. Terhorst, and **C.A. Biron**. IL-2-dependent NK cell responses discovered in virus-infected β 2-microglobulin-deficient mice. *J. Immunol.* **153**:5674-5681, 1994.
32. Orange, J.S., T.P. Salazar-Mather, S.M. Opal, R.L. Spencer, A.H. Miller, B.S. McEwen, and **C.A. Biron**. Mechanism of IL-12-mediated toxicities during experimental viral infections: role of TNF and glucocorticoids. *J. Exp. Med.* **181**:901-914, 1995.

33. **Biron, C.A.**, and R. Gazzinelli. IL-12 effects on immune responses to microbial infections: a key mediator in regulating disease outcome. *Curr. Opin. Immunol.* **7**:485-496, 1995. **Invited Review Article**
34. Orange, J.S., B. Wang, C. Terhorst, and **C.A. Biron**. Requirement for natural killer (NK) cell-produced interferon γ in defense against murine cytomegalovirus infection and enhancement of this defense pathway by interleukin 12 administration. *J. Exp. Med.* **182**:1045-1056, 1995.
35. Cousens, L.P., J.S. Orange, and **C.A. Biron**. Endogenous interleukin-2 (IL-2) contributes to T cell expansion and interferon gamma (IFN- γ) production during lymphocytic choriomeningitis virus infection. *J. Immunol.* **155**:5690-5699, 1995.
36. **Biron, C.A.**, and J.S. Orange. IL-12 in acute viral infectious disease. *Research in Immunology* **146**:590-600, 1995. **Invited Paper**
37. **Biron, C.A.**, H.C. Su, and J.S. Orange. Function and regulation of natural killer (NK) cells during viral infections: characterization of responses *in vivo*. *Methods: A Companion to Methods in Enzymology* **9**:379-393, 1996.
38. Orange, J.S., and **C.A. Biron**. An absolute and restricted requirement for interleukin 12 (IL-12) in natural killer (NK) cell interferon- γ (IFN- γ) production and antiviral defense: studies of NK and T cell responses in contrasting viral infections. *J. Immunol.* **156**:1138-1142, 1996.
39. Wang, B., G.A. Holländer, A. Nichogiannopoulou, S.J. Simpson, J.S. Orange, J.-C. Gutierrez-Ramos, S.J. Burakoff, **C.A. Biron**, and C. Terhorst. Natural killer cell development is blocked in the context of aberrant T lymphocyte ontogeny. *Int. Immunol.* **8**:939-949, 1996.
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43. **Biron, C.A.** Activation and function of NK cell responses during viral infections. *Curr. Opin. Immunol.* **9**:24-34, 1997. **Invited Review Article**
44. Cousens, L.P., J.S. Orange, H.C. Su, and **C.A. Biron**. Interferon- α/β inhibition of interleukin 12 and interferon- γ production in vitro and endogenously during viral infection. *Proc. Natl. Acad. Sci. USA* **94**:634-639, 1997.
45. Bonyadi, M., S.A.B. Rusholme, F.M. Cousins, H.C. Su, **C.A. Biron**, M. Farrall, and R.J. Akhurst. Mapping of a major genetic modifier of embryonic lethality in TGF β 1 knockout mice. *Nature Genetics* **15**:207-211, 1997.
46. **Biron, C.A.** NK cell regulation during viral infection. *Biochemical Society Transactions* **25**:687-690, 1997.
47. Miller, A.H., R.L. Spencer, B.D. Pearce, T.L. Pisell, P. Tanapat, J.J. Leung, F.S. Dhabhar, B.S. McEwen, and **C.A. Biron**. Effects of viral infection on glucocorticoid secretion and glucocorticoid receptor binding in immune tissues. *Psychoneuroendocrinology* **22**:455-474, 1997. **Curt P. Richter Award Paper**

48. Ruzek, M.C., A.H. Miller, S.M. Opal, B.D. Pearce, and **C.A. Biron**. Characterization of early cytokine responses and an IL-6-dependent pathway of endogenous glucocorticoid induction during murine cytomegalovirus infection. *J. Exp. Med.* **185**:1185-1192, 1997.
49. Orange, J.S., T.P. Salazar-Mather, S.M. Opal, and **C.A. Biron**. Mechanisms for virus-induced disease: tumor necrosis factor-mediated pathology independent of natural killer and T cells during murine cytomegalovirus infection. *J. Virol.* **71**:9248-9258, 1997. **Selected for ASM News Journal Highlights**
50. **Biron, C.A.**, L.P. Cousens, M.C. Ruzek, H.C. Su, and T.P. Salazar-Mather. Early cytokine responses to viral infections and their roles in shaping endogenous cellular immunity. *Adv. Exp. Med. Biol.* **452**:143-149, 1998.
51. Salazar-Mather, T.P., J.S. Orange, and **C.A. Biron**. Early murine cytomegalovirus (MCMV) infection induces liver natural killer (NK) cell inflammation and protection through macrophage inflammatory protein 1 α (MIP-1 α)-dependent pathways. *J. Exp. Med.* **187**:1-14, 1998. **Photograph from This Paper Selected for Cover of Issue**
52. 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- γ and IL-4 responses to viral infections: requirements for IL-2. *J. Immunol.* **160**:5007-5017, 1998.
53. **Biron, C.A.** Role of early cytokines, including alpha and beta interferons (IFN- α/β), in innate and adaptive immune responses to viral infections. *Seminars in Immunology* **10**:383-390, 1998. **Invited Paper**
54. Ruzek, M.C., B.D. Pearce, A.H. Miller, and **C.A. Biron**. Endogenous glucocorticoids protect against cytokine-mediated lethality during virus infection. *J. Immunol.* **162**:3527-3533, 1999.
55. She, J., M.C. Ruzek, P. Velupillai, I. de Aoz, B. Wang, D.A. Harn, J. Sancho, **C.A. Biron**, and C. Terhorst. Generation of antigen specific cytotoxic T lymphocytes and regulation of cytokine production takes place in the absence of CD3 ζ . *Int. Immunol.* **11**:845-858, 1999.
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57. Nguyen, K.B., and **C.A. Biron**. Synergism for cytokine-mediated disease during concurrent endotoxin and viral challenges: roles for natural killer and T cell IFN- γ production. *J. Immunol.* **162**:5238-5246, 1999. **Selected for Trends in Microbiology**
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60. **Biron, C.A.** Initial and innate responses to virus infection - pattern setting in immunity or disease. *Curr. Opin. Microbiol.* **2**:374-381, 1999. **Invited Review Article**
61. Klimstra, W.B., K.D. Ryman, K.A. Bernard, K.B. Nguyen, **C.A. Biron**, and R.E. Johnston. Infection of neonatal mice with Sindbis virus results in a systemic inflammatory response syndrome. *J. Virol.* **73**:10387-10398, 1999.
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63. Pien, G.C., and **C.A. Biron**. Compartmental differences in NK cell responsiveness to IL-12 during lymphocytic choriomeningitis virus (LCMV) infections. *J. Immunol.* **164**:994-1001, 2000.
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66. Salazar-Mather, T.P., T.A. Hamilton, and **C.A. Biron**. A chemokine-to-cytokine-to-chemokine cascade critical in antiviral defense. *J. Clin. Invest.* **105**:985-993, 2000.
67. Nguyen, K.B., L.P. Cousens, L.A. Doughty, G.C. Pien, J.E. Durbin, and **C.A. Biron**. IFN- α/β -mediated inhibition and promotion of IFN- γ : STAT1 resolves a paradox. *Nature Immunology* **1**:70-76, 2000. **Paper Featured in Issue News and Views**
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69. Sayós, J., K.B. Nguyen, C. Wu, S.E. Stepp, D. Howie, J.D. Schatzle, V. Kumar, **C.A. Biron**, and C. Terhorst. Potential pathways for regulation of NK and T cell responses: differential X-linked lymphoproliferative syndrome gene product SAP interactions with SLAM and 2B4. *Intl. Immunol.* **12**:1749-1757, 2000.
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.
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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.
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96. 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.
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99. 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.
100. 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**
101. 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* **10**:1970-1981, 2007. **Paper in Research Highlights of Nat. Reviews Immunol. 7:496, 2007**
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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.* **204**:2383-2396, 2007.
104. Fodil-Cornu, N., S.-H. Lee, S. Belanger, A.P. Makrigrannis, **C.A. Biron**, R.M. Buller, and S.M. Vidal. Ly49h-deficient C57BL/6 mice: a new mouse cytomegalovirus-susceptible model remains resistant to unrelated pathogens controlled by the NK gene complex. *J. Immunol.* **181**:6394-6405, 2008.
105. Lee, S.-H., K.-S. Kim, N. Fodil-Cornu, S.M. Vidal, and **C.A. Biron**. Activating receptors promote NK cell expansion for maintenance, IL-10 production, and CD8 T cell regulation during viral infection. *J. Exp. Med.* **206**:2235-2251, 2009. **Paper in Research Highlights of Nat. Reviews Immunol. 9:674-675, 2009**
106. **Biron, C.A.** Expansion, maintenance and memory in NK and T cells during viral infections: responding to pressures for defense and regulation. *PLoS Pathogen* **6**(3):e1000816. **"Pearl"**

107. Lee, S.-H., and **C.A. Biron**. Here today - not gone tomorrow: roles for activating receptors in sustaining NK cells during viral infections. *Eur. J. Immunol.* **40**:923-932, 2010.
Invited Mini-Review
108. Mack, E.A., L.E. Kallal, D.A. Demers, and **C.A. Biron**. Type 1 interferon induction of natural killer cell gamma interferon production for defense during lymphocytic choriomeningitis virus infection. *mBio* **2** (4):e00169-11, 2011.
109. Vidal, S.M., S.I. Khakoo, and **C.A. Biron**. Natural killer cell responses during viral infections: flexibility and conditioning of innate immunity by experience. *Curr. Opin. Virol.* **1**:497-512, 2011. *Invited Review Article*
110. Lee, S.-H., M.F. Fragoso, and **C.A. Biron**. A novel mechanism bridging innate and adaptive immunity: IL-12 induction of CD25 to form high-affinity IL-2 receptors on NK cells. *J. Immunol.* **189**:2712-2716, 2012, 2012. *Cutting Edge Report*
111. Gil, M.P., M.J.Y. Ploquin, W.T. Watford, S.-H. Lee, K. Kim, X. Wang, Y. Kanno, J.J. O'Shea, and **C. A. Biron**. Regulating type 1 IFN effects in CD8 T cells during viral infections: changing STAT4 and STAT1 expression for function. *Blood* **120**:3718-3728, 2012.
112. Kallal, L.E., and C.A. Biron. Changing Partners at the dance: Variations in STAT concentrations for shaping cytokine function and immune responses to viral infections. *JAK-STAT* **2**:e23504, 2013. *Invited Review Article*
113. Mace, E.M., A.P. Hsu, L. Monaco-Shawver, G. Makedonas, J.B. Rosen, L. Dropulic, J.I. Cohen, E.P. Frenkel, J.C. Bagwell, J.L. Sullivan, **C.A. Biron**, C. Spalding, C.S. Zerbe, G. Uzel, S.M. Holland and J.S. Orange. Mutations in *GATA2* cause human NK cell deficiency with specific loss of the CD56^{BRIGHT} subset. *Blood* **121**:2669-2677, 2013.
Paper Featured in a Blood Issue Comment
114. Tarrío, M.L., S.-H. Lee, M.F. Fragoso, H.-W. Sun, Y. Kanno, J.J. O'Shea, and **C.A. Biron**. Proliferation conditions promote intrinsic changes in NK Cells for an IL-10 response. *J. Immunol.* **193**:354-363, 2014.
115. Wynne, C., E. Lazzari, M. Carty, S. Smith, E.M. McCarthy, J.N. Gabhann, L.E. Kallal, R. Higgs, S.A. Cryan, **C.A. Biron**, and C.A. Jefferies. TRIM68 negatively regulates IFN- beta production by degrading TRK fused gene, a novel driver of IFN-beta downstream of anti-viral detection systems. *PLoS One* **9**:e101503, 2014.
116. Donnelly, R.P., R.M. Loftus, S.E. Keating, K.T. Liou, **C.A. Biron**, C.M. Gardiner, and D.K. Finlay. mTORC1-dependent metabolic reprogramming is a prerequisite for Natural Killer cell effector function. *J. Immunol.* **193**:4477-4484, 2014.
117. Suarez-Ramirez, J.E., M.L. Tarrío, K. Kim, Delia A. Demers, and **C.A. Biron**. CD8 T cells in innate immune responses: Using STAT4-dependent but antigen-independent pathways to gamma interferon during viral infections. *mBio* **5** (5): e01978, 2014.
Highlighted in Faculty of 1000.
118. **Biron, C.A.**, and M.L. Tarrío. Immunoregulatory Cytokine Networks: 60 Years of learning from murine cytomegalovirus. *Med. Micro. Immunol.* **204**:345-354, 2015.
Special issue on the 2nd Waldthausen Castle Symposium on Margret Gladys Smith 60th Anniversary of Cytomegalovirus Isolation.
119. Kelly, A., M.W. Robinson, G. Roche, **C.A. Biron**, C. O'Farrelly and E.J. Ryan. Immune cell profiling of IFN-lambda responses shows pDCs express highest levels of IFN-λR1 and are directly responsive via the JAK-STAT pathway. *J. Interferon Cytokine Res.* **36**:671-680, 2016.

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
 NIAID Workshop (Speaker and Participant), "Immunity to Malaria", Bethesda, MD, 2009
 Ragon Institute of MGH, MIT, and Harvard (with sponsorship from the DAIDS, NIAID and the Ragon Institute and the Harvard Center for AIDS Research), Workshop on "Role of NK Cells in the Adaptive Immune Response to HIV-1 – Implications for Vaccine Design", Cambridge, MA, 2013

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
 Carolina Alumni Biosciences Reunion, Department of Microbiology and Immunology Symposium, Chapel Hill, NC, 2013
 External Reviewer and Speaker, Texas Children's Hospital Center for Human Immunobiology, Baylor Medical School, 2nd Annual Retreat, Galveston Island, TX, 2014

2nd Waldthausen Castle Symposium: Margaret Gladys Smith 60th Anniversary of Cytomegalovirus Isolation, M.J. Reddehase and U.H. Kosinowski, Organizers. Mainz, Germany, 2014
 Distinguished Lecturer, the American Association of Immunologists Meeting, 2015
 Virology Symposium, Louisiana State University Health Sciences Center, Center for Molecular and Tumor Virology, Shreveport, LA, 2015

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 Intl. Cytokine Society and 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 post-doc*)
 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
 Intl. Society for Interferon and Cytokine Research Meeting, Oxford, UK, 2007
 3rd Meeting on Hepatic Inflammation and Immunity (Members of USJCMSP Immunology Board (IB) and Joint Hepatitis Panels (HP) in participation), Galveston, TX, 2008

8th Awaji Intl. Forum on Infection and Immunity, Awaji, Japan, 2008
 NK2008, Perth Australia, 2008
 British Society for Immunology (BSI), Symposium on "Innate Immune Signaling and Viral Infection", Glasgow, Scotland, 2008
 US-Japan Immunology Board Meeting, "Adaptive and Innate Immune Responses to Neglected Tropical Diseases Conference", San Diego, CA, 2010
 Jak-STAT Signaling: from Basics to Disease; FEBS – Special Meeting, Vienna, Austria, 2010
 EMBO Workshop on Viruses and Innate Immunity, Dublin, Ireland, 2010
 14th Intl. Congress of Immunology, Kobe, Japan, 2010
 NK2010, 12th Meeting of the Society for Natural Immunity, Dubrovnik-Cavtat, Croatia, 2010
 Joint Meeting of the Society for Leukocyte Biology & The Intl. Endotoxin and Innate Immunity Society, Vancouver, Canada, 2010
45th Joint Working Conference on Immunology and Viral Diseases, US-Japan Cooperative Medical Science Program, Stanford, CA, 2011 – Meeting Co-Chair and Speaker
 The Jak-Stat Pathway – 20 Years from Discovery to Drugs, Bethesda, MD, 2011
 The Lorne Infection and Immunity Meeting, Lorne, Australia, 2012
 NK2012 Workshop, 13th Meeting of the Society for Natural Immunity, Pacific Grove, CA, 2012
 15th Intl. Congress of Immunology, Milano, Italy, 2013
 NK2018, Intl Meeting of the Society for Natural Immunity, San Antonio, TX, 2018

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

The Society for Natural Immunity Symposium on "Signal Transduction during NK Cell Activation", Experimental Biology Meeting, New Orleans, LA, 2002

The Intl. Society for Interferon and Cytokine Research Symposium on "Biological Consequences of IFN Signaling", 2002

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", Banff, 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

The Joint Keystone Symposium on "Pattern Recognition Molecules and Immune Sensors of Pathogens/Dendritic Cells, Banff, Alberta, Canada, 2009

Cold Spring Harbor Meeting on "Harnessing Immunity to Prevent and Treat Disease", Cold Spring Harbor, NY, 2009

American Association for the Advancement of Science, Annual Meeting, San Diego, CA, 2010

Major Symposium on " **Innate Immunity: Flexibility in Sensing, Signaling, and Cellular Responses**", AAI Meeting, San Francisco, CA, 2011 - **Symposium Chair**

Federation of Clinical Immunology Societies (FOCIS) Meeting, Session on "*Innate Immunity and Disease*", Washington, D.C., 2011

American Society of Microbiology Meeting, Session on “*Immunological Tools and Biomarkers for Infectious Diseases*”, San Francisco, CA 2012
 Federation of Clinical Immunology Societies (FOCIS) Meeting, TTS-ASHI Symposium, “*Natural Killer Cells in Transplant Rejection, Tolerance and Infection*”, Vancouver, BC, Canada, 2012
 45th Meeting of the Society for Leukocyte Biology, “*Inflammation in Innate and Adaptive Immune Mechanisms*”, Maui, Hawaii, 2012
 Keystone Symposium on “*Viral Immunity*”, Breckenridge, CO, 2015
 Select Bio Conference on Cancer and Immunotherapy 2016, Biofluid Biopsies, Convergence of Emerging Fields, Boston, MA, 2016

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
Keynote Speaker, Tufts University Immunology Program Retreat, Hyannis, MA, 2008
Keynote Speaker, UMass Graduate School Immunology and Virology Research Retreat, So. Yarmouth, MA, 2009
 New England Immunology Conference, Woods Hole, MA, 2009

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 Glasgow, Scotland
- 2000 - Ohio State Univ., Columbus, OH (+96); Schering-Plough Laboratory for Immunological Research, Dardilly 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; Univ. of California, San Francisco, CA; Univ. of Pennsylvania, Philadelphia, PA (+97); Skirball Inst. of Biomolecular Medicine, New York Univ. Medical Center; Massachusetts General Hospital, Harvard Medical School, Charleston, MA (+95); University of California, Berkeley, Berkeley CA
- 2002 - NIH, Bethesda, MD (+96, 97, 00); Univ. of Texas, Southwestern Medical School, Dallas, TX; Institut Pasteur, Paris, France; Univ. 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; Univ. 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; University of Washington, Seattle, WA, 2004
- 2005 - Univ. of British Columbia, Vancouver, Canada; 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; Univ. of Alberta, Canada
- 2007 - Charles Gould Easton Seminar Series, Univ. of Toronto, Toronto, Canada; University College Dublin, St. Vincent's Univ. Hospital, Dublin, Ireland
- 2008 - Osaka Univ., Osaka, Japan; Genetics Seminar Series, Scripps Research Inst., La Jolla, CA
- 2009 - Univ. of Alabama (UAB) Program in Immunology and Comprehensive Cancer Center, Birmingham, AL; National Institutes of Allergy and Infectious Diseases, NIH, Twinbrook, MD; Cornell University/Rockefeller University Virology Course, New York, NY (+03, 05); Univ. of Pennsylvania, Department of Microbiology, Philadelphia, PA
- 2010 - Trinity College Dublin (TCD), School of Biochemistry and Immunology, Dublin, Ireland; Queen's Univ., Belfast, Northern Ireland; Center for Infection and Immunity, Mailman School of Public Health and College of Physicians and Surgeons of Columbia University, New York, NY; **Distinguished Speaker**, HUMIGEN LLC, Hamilton, NJ
- 2011 - Rockefeller Univ. Virology Course, New York, NY; NIAID Rocky Mountain Laboratories, Hamilton, MT; Albert Einstein College of Medicine, Bronx, NY
- 2012 - **AAI Advanced Course in Immunology**, Boston, MA
- 2013 - Univ. of California, San Diego (UCSD), San Diego, CA; Univ. of Iowa, Iowa City, IA; Univ. of Michigan, An Arbor, MI; Rush University Medical Center, Chicago, IL; Trinity College, Dublin, Ireland; **Keynote Speaker**, Centre d'Immunologie de Marseille-Luminy, Marseilles, France
- 2014- Univ. of Georgia, Athens, GA; Univ. of Massachusetts Medical School, Worcester, MA
- 2015- Brown Univ. and Miriam Hospital, Infectious Disease Conference, Providence, RI; Univ. of Colorado School of Medicine, Aurora, CO; Johns Hopkins School of Public Health, Baltimore, MD
- 2016- Department of Microbiology and Immunology, School of Medicine, Univ. of Texas Health Sciences Center at San Antonio, TX; Immunology, Univ. of Virginia, Charlottesville, VA
- 2017- Department of Immunology and Microbiology, Welsh Symposium, Scripps Research Inst., La Jolla, CA

Research Grants

NIH Funding from 1985-

Active Funding

NIH Grant R56-AI124461-01; NK Cell STAT3 and Virus-Induced IL-6 Disease; 9/23/16-8/31/19; Principal Investigator; Direct Costs - \$364,494; Total Costs - \$592,303.

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 Immunologists 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 956 (+full indirect cost recovery to institution).

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 mIL-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 RO1-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 956 (+full indirect cost recovery to institution).

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 956 (+full cost recovery to institution).

NIH Grant RO1-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 956 (+full indirect cost recovery to institution).

NIH Grant RO1-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 956 (+full indirect cost recovery to institution).

- 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 956 (+full indirect cost recovery to institution).
- U.S. Dept. Education GAANN P200A000117 (1-3; 4-6); Ph.D. Training in Pathobiology of Infectious Disease and Host Responses: A Multidisciplinary Program in Biology; 8/15/00-6/30/06 (extension through 6/30/07); Grant to Brown University Graduate Program in Pathobiology (PI - N. Thompson); Research Director and Co-Principal Investigator; Direct Costs - \$459,000 + \$371,535.
- NIH Grant NCRR 1S1RR021051NIH; Shared Instrument Grant: BD FACSAria Flow Cytometer; 2007-08; (PI. L. Brossay) co-Principal Investigator; Direct Costs \$402,975.
- NIH Grant R01-AI55677 (01-05); Type 1 IFN Function and Signaling in Immunity to Viruses; 06/15/03-11/30/08 (with extension); Principal Investigator; Direct Costs - \$1,125,000/4.5yr 956 (+full indirect cost recovery to institution).
- NIH Grant R01-CA(AI)41268 (19-23); Natural Killer Cell Growth and Development; 5/1/04-4/30/10; Principal Investigator; Direct Costs - \$1,150,000/5yr 956 (+full indirect cost recovery to institution).
- NIH Grant R56-AI55677 (06A1); Type 1 IFN Function and Signaling in Immunity to Viruses; 10/15/08-8/30/10; Principal Investigator; Direct Costs - \$537,956 (+full indirect cost recovery to institution).
- U.S. Dept. Education GAANN (1-5 2nd renewal); Ph.D. Training in Pathobiology of Infectious Disease and Host Responses: A Multidisciplinary Program in Biology; 8/14/06-8/13/11; Grant to Brown University Graduate Program in Pathobiology; Research Director and Principal Investigator; Direct Costs - \$380,016.
- Award from ATOX Bio, LTD; Continuation Studies of EB103 as a Novel Treatment for Peritonitis; 7/1/15-10/31/15; (Principal Investigator at Memorial Hospital - S. Opal) Principal Investigator on Sub-award to Brown University; Direct Costs - \$6,562.
- NIH Grant R01-AI55677 (06A2-10); Type 1 IFN Function and Signaling in Immunity to Viruses; 9/1/10-8/31/16; Principal Investigator; Direct Costs - \$1,235,694/4-5 yrs; Total Costs - \$1,986,423/4-5.

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
 Emerging Leaders in America (Who's Who), 1993-1994
 Brintzenhoff Professor of Medical Sciences, 1996, Brown University
 Shipley Symposium Speaker, Harvard Medical School, 2001
 Elected Fellow of the American Association for the Advancement of Science (AAAS), 2002-present
 Anderson Symposium Speaker, University of Virginia, 2005
 Steering Committee - Boston Consortium to Advance a Gates Institute for Global Health Discovery, 2008
 Elected Fellow of the American Academy for Microbiology, 2009-present
 Elected to Council for the Society of Leukocyte Biology (SLB), 2012-2016
 Distinguished Lecturer, the American Association of Immunologists Meeting, 2015

Advisory Boards

Appointment Member of External Scientific Advisory Board, Trudeau Institute, Saranac Lake, NY, 2004-15
Review Team for the University of North Carolina - Chapel Hill, Department of Microbiology and Immunology Educational Programs, 2010
External Advisory Committee COBRE - University of Vermont Center for Immunology and Infectious Diseases, Burlington, VT, 2010
External Reviewer for the Master in Immunology Program, Trinity College Dublin, Ireland, 2014
External Review Board for the Training Program in Immunology, University of Colorado School of Medicine and National Jewish Hospital, 2015
Scientific Advisory Board, McGill University Research Center on Complex Traits, Montreal Canada, 2016

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
Member of the Special Emphasis Panel for Unsolicited Program Project Application Review, NIAID, NIH, 2011
Member of the Special Emphasis Panel for Unsolicited Program Project Application Review, NIAID, NIH, 2012
Appointed to European Research Council as Referee in Peer Review for "Ideas Specific Program", 2012
Grant Review for *Istituto Pasteur-Fondazione Cenci Bolognetti* (Italy), 2013
Member of the Special Emphasis Panel for Review (Step 2) of Responses to RFA for Centers of Excellence in Translational Research (CETR), NIAID, NIH, 2013
Appointed to Emerging Interdisciplinary Research Program (EIRP) of the University of the Philippines, to Review Application, 2013
Reviewer for the Biological and Medical Sciences Austrian Science Fund, 2014
Tufts/Brown CFAR Application Review, 2014-15
Member of Panel for Review of Responses to RFA for Hepatitis C Cooperative Research Centers: Immunity to HCV Infection, NIAID, NIH, 2015
Grant Review for Arthritis Ireland, 2016
Appointed to European Research Council as Referee in Peer Review for "ERC Advanced Grant Program", 2016-17
Member of Special Emphasis Panel for Review, Center for Scientific Review, NIH, 2017
Reviewer, PRESTIGE Marie Curie Post-Doctoral Fellowship Program, France, 2017
External Referee, European Research Council, ERC Starting, Consolidator and Advanced Grant Call, 2017
Review for Royal Society Research Professorship, Royal Society, UK, 2017
Member of NIAID Special Emphasis Panel, Review of Applications Centers of Excellence for Translational Research, Center for Scientific Review, NIH, 2018

Board for NIH

Board of Scientific Counselors (BSC) - Subcommittee 2 - Basic Sciences, of the National Cancer Institute (NCI) (Overseeing Intramural Program), 2005-2010
US-Japan Immunology Board, for National Institutes of Allergy and Infectious Diseases (NIAID), 2008-12 (chair 2008-2011) (*program reorganized in 2011*)

Board of Scientific Counselors (BSC) of the National Institutes of Allergy and Infectious Diseases (NIAID), *ad hoc* member, June and December 2009,
Appointed Member 2010-2015

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
Member, NIH, NIAID "Think-Tank" Task Force to Prioritize Areas for Investigation of NK Cells Immunoregulatory Functions with Use for HIV Vaccine Development, 2013

Service To Profession

Meetings and Society Service

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, Edinburgh, 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 Intl' 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 Nominating Committee, American Association of Immunologists, 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 Member Awards Committee, American Association of Immunologists, 2007-2010,
Chair 2008-2010
Elected to the AAAS Section on Medical Sciences, Chair-Elect 2008-09,
Chair 2009-10, **Retiring Chair** 2010-11
Member of Scientific Committee, NK2012 Workshop, 13th Meeting of the Society for Natural Immunity, Pacific Grove, CA, 2012

Co-Chair, AAI Meeting, Block Symposium on "Innate Immune Cells in Viral Infections", Boston, MA, 2012

Elected to Council of Society for Leukocyte Biology (SLB), 2012-16

Council Liaison to SLB Women and Diversity Committee, 2012-16

Chair, Plenary IV Session on "Novel Prospective on Co-Inhibitor Function and Modulation in Inflammation and Disease", 46th Meeting of the Society for Leukocyte Biology, Newport, RI, 2013

Chair, Plenary II Session on "Epigenetics and Immunity", 48th Annual Meeting of the Society for Leukocyte Biology, Raleigh, NC, 2015

Elected Member of Finance Committee, American Association of Immunologists, 2013-16

International Congress in Immunology (ICI) 2016, Invited Session Chair, Melbourne, Australia, 2016
(*reviewed and ranked abstracts but unable to attend meeting*)

NK2016, Intl Meeting of the Society for Natural Immunity, Invited Session Chair, "NK Cells and Virus Infection", Taormina, Italy, 2016

NK2018, Intl Meeting of the Society for Natural Immunity, Scientific Oversight Committee, San Antonio, TX 2017

Journals

Reviewer for Journals, 1982-present
American J of Pathology, Blood, Cancer Research, Cell Host and Microbe, Clinical Immunology and Immunopathology, European J of Immunology, FASEB Journal, Hepatology, Immunity, Immunology Letters, International Immunology, JAK-STAT, J of Clinical Investigation, J of Experimental Medicine, J of General Virology, J of Immunology, of Infectious Diseases, J of Leukocyte Biology, J of Virology, Nature, Nature Immunology Reviews, Natural Immunity and Cell Growth Regulation/Natural Immunity, Nature Genetics, Nature Immunology, Nature Medicine, New England Journal of Medicine, PLoS One, PLoS Pathogens, Proceedings of the National Academy of Sciences, USA, Science, Science Translation Medicine, Trends in Immunology, 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*, 2005-2018

Board of Editors for *mBio*, open access journal from ASM, 2010-present

Specialty Chief Editor – Microbial Immunity - *Frontiers in Immunology*, open access journal launched 2010, 2010-2015

Editorial Board for *Current Opinion in Virology*, 2012-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;
American Academy of Microbiology; Association of Medical School Microbiology and
Immunology Chairs (*past*); New York Academy of Sciences (*past*)

Biographical Listings

Who's Who Lifetime Achievement Award, 2017

Who's Who in America, 51th through 64th and 66th through 70th Editions, 1997-2010, 2011-16

Who's Who of American Women, 17th through 28th Editions, 1991-2011

Who's Who in the East, 24th through 30th and 39th through 43rd Editions, 1993-2003, 2011-15

Who's Who in Medicine and Healthcare, 1st through 3rd and 8th Editions, 1997-2002, 2011-12

Who's Who in the World, 12th, 16th, 19th, 21st and 26th Editions, 1995, 1999, 2002, 2004, 2009

Who's Who in Science and Engineering, 2nd and 7th Editions, 1994-95, 2003-04

Who's Who in American Education, 3rd, 5th, and 6th Editions, 1991-93, 1995-97, 2003-05

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., 2003-2012
 - Rhode Island Foundation Grant Recipient, 2004
- Seung-Hwan Lee, Ph.D., 2004-2011
 - 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**
- Richard Bennett, Ph.D., 2006-2009
 - CFAR Development Award, 2007-08
 - C.A. Biron - Mentor**

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
- Margarite L. Tarrío, Outstanding Young Investigator Award, The Yin & Yan of Inflammation - The Role of Inflammation in Health & Disease Meeting, Trudeau Institute, New York, 2014

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
- Ethan A. Mack, Brown University, Maria L. Caleel Memorial Prize for Academic Excellence, Distinguished Senior Thesis Award in the Biological Sciences, 2011
- Christopher Noyes, Brown University, Richard J. Goss Prize in Experimental Biology, 2018

Visiting Foreign Graduate Student

- Lene Malmgaard, Visiting from the University of Aarhus, Denmark, Awards from The Forskningsstyrekseb and The Knud Hojgaards 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, 2007-2009
 Mentor for University Junior Faculty Mentoring Program, 2013-
 Mentor for Junior Faculty in MMI, 2015-

Faculty Search Committees and Administrative Activities Brown University

Member Search Committee for Faculty Position in Infectious Diseases, 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, 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, 2003
 Dean's Action Group/Search Committee for the New Position of Dean for Cross-
 Disciplinary Sciences, Brown University, 2005-06
 Chair, MMI Faculty Search Committee for Senior Bacteriologist, 2007-08
 Pathobiology Graduate Program Steering Committee, 2008-2013
 Member of Search Committee for Faculty Position in MMI, 2012-13
 Member of the Divisional Space Committee, 2013-
 Member of the Divisional Promotion Committee, 2015-
 Heading up Dept. of Molecular Microbiology and Immunology Committee on Diversity,
 Inclusion Action Plan (DIAP) 2018-

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, 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 (1st Award) and Trainer for the NIH-supported Training Program in Trauma and Inflammation (PI - J. Albina), 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., 2000-2006, Assistant Professor of Medical Sciences
(Fellowship Training - UCLA/La Jolla Institute, CA)
- George Yap, Ph.D., 2000-2007, Assistant Professor of Medical Sciences
(Fellowship Training - NIH, Bethesda, MD)
- Wen-Ming Chu, M.D./Ph.D., 2001-2010, Assistant Professor of Medical Sciences
(Fellowship Training - UCSD, La Jolla, CA)
- Richard Bennett, Ph.D., 2006-2009, Assistant Professor of Biology
(Fellowship Training - Harvard University and University of California
at San Francisco)
- Alexandra Deaconescu, Ph.D., 2014-present, University Mentoring Program,
Assistant Professor of Molecular Cell Biology and Biochemistry
(Fellowship Training - Brandeis University, Waltham, MA)
- Shipra Vaishnava, Ph.D., 2015-present, Department Mentoring,
Assistant Professor of Molecular Microbiology and Immunology
(Fellowship Training - UT Southwestern, Dallas, TX)

Graduate Training and Teaching Activities

Sponsor for Post-Doctoral Fellows/Instructors/Investigators

- Marion T. Kasaian, Ph.D., 1987-89,
(Graduate Training - Case Western Reserve University, Cleveland, OH)
Current Position - Principal Scientist, Pfizer, 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)
Following Position - Scientist, Genzyme, Framingham, MA
Current Position - Pfizer, Cambridge, MA
- Thais P. Salazar-Mather, Ph.D., 1993-99
(Graduate Training - Marshall University, Huntington, WV)
Current Position - Adjunct Assistant Professor, Brown University
- Marc Dalod, Ph.D., 2000-2002
(Graduate Training - INSERM, Paris, France)
Current Position - Team Leader, INSERM, Université de la Méditerranée, Marseille, France
- M. Pilar Gil, Ph.D., 2003-2012
(Graduate Training - University of Barcelona, Spain)
Post-Doctoral Training - Washington University School of Medicine, St. Louis, MO)
Following Position - Appointment in Other Brown University Department
- Seung-Hwan Lee, Ph.D., 2004-2011
(Graduate Training - University of Ottawa, Ottawa, Canada)
Current Position - Assistant Professor, University of Ottawa, Canada
- Takuya Miyagi, M.D., Ph.D., 2004-2007
(Graduate and Medical Training - Osaka University School of Medicine, Japan)
Current Position - Assistant Professor, Osaka University School of Medicine, Japan
- Mickaël Ploquin, Ph.D., 2006-2008
(Graduate Training - Pasteur Institute, Paris, France)
Last Known Position - Post-doctoral Associate Pasteur Institute, France)

- Xin Wang, Ph.D., 2009-2010
(Previous Post-Doctoral Training - University of North Carolina, NC)
- Lara Kallal, Ph.D., 2010-2013
(Graduate Training – University of Michigan, Ann Harbor, MI
Current Position – Medical Writer, KnowledgePoint360, Lyndhurst, NJ)
- Jenny Suarez-Ramirez, Ph.D., 2011-2013
(Graduate Training – University of Connecticut School of Medicine, Farmington, CT
Current Position – Post-Doctoral Associate, University of Connecticut School of Medicine, Farmington, CT)

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
Fellow in Pediatric Allergy and Immunology at the Children's Hospital and Harvard University School of Medicine, Boston, MA
Current Position - Chair, Department of Pediatrics, Vagelos College of Physicians and Surgeons, Columbia University; New York, NY
- 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
Immunology Fellow, NIH, Bethesda, MD
Current Position – Chief, Tenured Investigator, Laboratory of Immunological Diseases Unit, Laboratory of Host Defenses, NIAID, 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)
Fellow in Pediatric Allergy and Immunology, Children's Hospital of Philadelphia, University of Pennsylvania, Philadelphia, PA
Current Position – In Clinical Practice

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)
Current Position – Pfizer, Cambridge, 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 – Associate Director, Emerging Innovations, Scientific Partnering & Alliances, AstraZeneca Pharmaceuticals, MA
- 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

Current Position - Program Officer, NIAID, NIH

- 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

Current Position - Associate Professor, Kennesaw State University, Kennesaw, GA

- Margarite Tarrío, "Intrinsic Factors Influencing NK and CD8 T Cell Responses to Viral Infections", 2011-17

(Undergraduate Training - Brandeis University, MA)

Following Position - Post-Doctoral Associate, Novartis, Cambridge, MA

Advisor for Medical Student Research (Full Time)

- Kevin Liou, 2013-14

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
- Claire Wynne, "TLRs and TRIMs", Visiting from the Royal College of Surgeons, Dublin, Ireland, 2011

Advisor for Visiting Foreign Undergraduate Student Research

- Christiane Schön, Veterinärmedizinische Universität Wien, Bachelor Degree Program: Biomedicine and Biotechnology, Vienna, Austria, 2011

Graduate Program Activities

Member Molecular Cell and Biochemistry 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, (2-4 students per year), 1990-2015

Trainer Environmental Toxicology NIH Training Grant, 1993-2003

Trainer GAANN Dept. of Education Grant, 2000-2013

Trainer Gastroenterology Training Grant (PI - J. Wands), 2003-13

Trainer for the NIH-supported Training Program

in Trauma and Inflammation (PI - J. Albina), 2003-20

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 Univ. 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 α 14i NK T Cells", Ph.D., Brown University, Providence, RI, 2007
- Rosa H. Jimenez, "Insights into Hepatic Carcinogenesis: The Effect of Rapamycin on Rat Liver Cell Lines", Ph.D., Brown University, Providence, RI, 2010
- Matthew Riolo, Pathobiology Graduate Program
- Cong (Michael) Cao, "The Role of Inhibitory Heterotrimeric G Proteins in Receptor Tyrosine Kinase Function and Identification of Defective Trk β Signaling in Angelman Syndrome", Ph.D., Brown University, Providence, RI, 2011
- Ribhu Nayar, "IRF4 Does the Balancing Act", Ph.D., Univ. of Massachusetts Medical School, Worcester, MA, 2015
- Wilfredo Garcia Beltran, "KIRs and Human NK Cells", Ph.D. Harvard University, Cambridge, MA, May, 2016
- Elizabeth Anne Olesin (maiden name Schutten), "Transcriptional Regulation of Effector and Memory Responses during Acute and Chronic Lymphocytic Choriomeningitis Virus (LCMV) Infection", Ph.D., Univ. of Massachusetts Medical School, Worcester, MA, 2018

Undergraduate Training and Teaching Activities

Program Activities

- ScB Biology Advisor for Class of '95
- Reader for Honors Theses
- Biology Concentration Advisor, 2013-present

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
- Han Cun, "Investigating the Consequences of Type 1 Interferon Receptor Expression on NK Cells", 2009-10
- Ethan Mack, "The Early Immune Response to Viral Infections: Type 1 Interferon Regulation of Interferon- γ Production by Peritoneal NK Cells during LCMV and MCMV Infection", 2010-11
- Madeleine Jennewein, "Signal Transducer and Activator of Transcriptions (STAT) Molecules in Liver NK and NKT Cells During Acute Viral Infection", 2013-2014
- David O'Connell, UTRA Summer of 2015
- Christopher Noyes, UTRA Summer of 2017, Independent Study, 2017-2018

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)
Lectures in Innate Immunology (Bio 152)