



[Dr. Scott Byrne](#) is a cellular immunologist studying the effects of sunlight on the immune system. His group is interested in how the ultraviolet part of the solar spectrum alters the immune outcome so that immune regulation or suppression occurs instead of immune activation. These studies are important because immune suppression is one of the main contributors to skin cancer development. Understanding the cellular and molecular mechanisms underlying immune regulation is also important for other diseases such as autoimmune disorders and for the success of immunisation strategies.

Dr. Scott Byrne is a Cancer Institute NSW research fellow funded by [The Cancer Institute NSW](#), [The Ramaciotti Foundation](#) and [The University of Sydney](#). After returning from [The MD Anderson Cancer Center](#) in Houston, Texas in 2006, Dr. Byrne continued his research into the cellular mechanisms of UV-induced immunosuppression. He [discovered](#) that one way UV causes immune suppression is via the activation of suppressor B cells in the lymph nodes draining the irradiated skin site. He also [discovered](#) that UV induces mast cells to migrate from the site of UV irradiation to the draining lymph nodes where they home to B cell zones. [Because mast cells have the capacity to activate B cells](#) his current research efforts aim to determine whether UV-activated mast cells induce suppressor B cells in lymph nodes and what effect this has on downstream immune outcomes.

Team Members:

Research Assistants:



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PhD Students:

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Key Words:

Mast Cells, B lymphocytes, Regulatory T cells, NKT cells, Skin, Dendritic Cells, Skin Cancer, Ultraviolet, Sunlight, Immune Regulation, Immune Suppression, Tolerance, Autoimmunity, Cell Migration, Dermatology, Photoimmunology, Immunology, Chemokines, Cytokines, Lymph Node

Publications (Journal Articles):

1. Peter Wolf, [Scott N. Byrne](#), Alexandra Gruber-Wackernagel. 2009. [Resistance to ultraviolet radiation-induced immune suppression: an emerging phenomenon in polymorphic light](#)

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2. Alexandra Gruber-Wackernagel, **Scott N. Byrne** and Peter Wolf. 2009. Pathogenic mechanisms of polymorphic light eruption. *Frontiers in Bioscience* (in press – accepted 10 Nov 2008) *all authors contributed equally*.
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Publications (Book Chapters):

1. **Scott N. Byrne** and Gary M. Halliday 2009. Sunlight induced Immunosuppression: A role for inflammatory mediators in the induction of suppressor cells. in *Immunosuppression: New Research* ([Nova Scientific Publishers, NY](#)). *In Press*.