

# Prof. Bruce R. Blazar: status, challenge, and prospect of the clinical applications in graft-versus-host disease

Submitted Nov 18, 2018. Accepted for publication Nov 23, 2018.

doi: 10.21037/atm.2018.11.56

View this article at: <http://dx.doi.org/10.21037/atm.2018.11.56>

## Editor's note

During November 2–3, 2018 Summit Forum on Immunology and Clinical Application was held in Nanjing, China with the focus on cell therapy, transplantation immunity, and new immunological techniques and methods. During this forum, we are glad to interview Prof. Bruce R. Blazar to share his perspectives on graft-versus-host disease specially (*Figure 1*).

## Expert's introduction

Bruce R. Blazar (*Figure 2*), MD, is the Regents Professor of Pediatrics in the Division of Blood and Marrow Transplantation and attends on the Pediatric Blood and Marrow Transplantation (BMT) service. Dr. Blazar is the recipient of the Children's Cancer Research Fund Land Grant Chair in Pediatric Oncology to recognize his pioneering work in the development of novel immune-based therapies. He is the Founding Director of the Clinical and Translational Sciences Institute and the Founding Director of the Center for Translational Medicine.

Dr. Blazar received his MD from Albany Medical College. He completed a residency in Pediatrics and a fellowship in hematology/oncology and bone marrow transplantation at the University of Minnesota. Dr. Blazar joined the University of Minnesota faculty in 1985. He is board certified in Pediatrics and Hematology/Oncology.

Dr. Blazar is the recipient of National Institutes of Health (NIH) MERIT Awards from the National Heart, Lung, and Blood Institute as well as the National Institute of Allergy and Infectious Diseases. He is the Principal Investigator of the UMN Clinical and Translational Sciences Award (U54), NIH funded R01 grants, P01 Projects, a U19 grant subcontract and Leukemia and Lymphoma Translational Research grants focusing on BMT immunological studies. Dr. Blazar is the author of more than 750 manuscripts, which have appeared in premier peer-reviewed publications.



Figure 1 Prof. Blazar is delivering a speech.

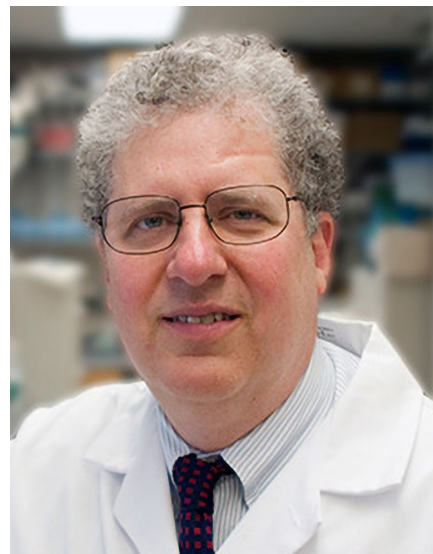


Figure 2 Prof. Bruce R. Blazar.



**Figure 3** Prof. Bruce R. Blazar: status, challenge, and prospect of the clinical applications in graft-versus-host disease (1).

Available online: <http://www.asvide.com/article/view/29400>

### Interview (Figure 3)

**ATM:** *One of your research interests is graft-versus-host disease, would you please briefly introduce the current status of clinical applications in graft-versus-host disease in the USA?*

**Prof. Blazar:** Graft-versus-host disease is a complication of allogeneic transplant that it happens in 20% to 70% of people, dependent upon the situation of the transplant. Strategies in the United States as well as China and elsewhere are looking at preventing that by either removing T cells that cause the disease or by giving drugs that can inhibit the T cells from attacking the host. The drugs are generally not very specific and globally suppress the immune system. However, there are new drugs that are now becoming available that are much more specific in addition to these therapies. People everywhere are exploring cell therapies to prevent or treat graft-versus-host disease, most of which are in early clinical trials.

**ATM:** *From your perspective, what is the biggest challenge of the clinical applications in graft-versus-host disease?*

**Prof. Blazar:** Due to major complications from graft-versus-host disease itself and adverse effects on immune recovery leading to infections and relapse of the disease, there's a high degree of morbidity and mortality. Once you have graft-versus-host disease, the patients that fail to respond to steroids generally have a very poor prognosis. The widespread use of allogeneic transplant will require us finding ways to prevent graft-versus-host disease in order

to allow more people to have the therapy without as many concerns about morbidity or mortality.

**ATM:** *What is your prospect of the clinical applications in graft-versus-host disease in the near future?*

**Prof. Blazar:** Our own laboratory is focused on cell therapies and we have brought in an immunosuppressive cell therapy known as regulatory T-cells, but we're also working on other cell therapies to suppress graft-versus-host disease. Among them are innate lymphoid cells type 2 cells and myeloid-derived suppressor cells from the induced pluripotent stem cells. Cell therapies that change the immune system may be more specific than using steroids or other similar drugs.

**ATM:** *As the Founding Director of Clinical and Translational Sciences Institute and Center for Translational Medicine, could you please share with us the main projects being carried out?*

**Prof. Blazar:** The Center for Translational Medicine has been founded with its sole goal of bringing in new therapies into the clinic. The therapies are wide-ranging, and depend on what investigators have developed. We help take them from the laboratory into the clinic. The investigator may come to us with the new therapy they tested it in cell culture or in mice. Then, we do the appropriate testing work to help bring this into the clinic including obtaining the required FDA approval to. The Clinical Translational Science Institute is a newer organization whose idea is to provide infrastructure support throughout the institution. It is meant to provide support in bench-to-bedside discovery, translation, community engagement, education and training of the next generation of students and faculty, as well as in providing the highest level of clinical research in patient care. Therefore, the patients have the opportunities to participate the new studies and the center helps them conceive of those and implement them.

**ATM:** *As a well-known pediatric hematologist oncologist, what qualities do you think are necessary to be an excellent doctor?*

**Prof. Blazar:** There are few qualities: first, I think you have to be very dedicated to understanding the diseases that you are treating to help your patients. Only by this way can the newest therapies be within your armamentarium so that you

can select the appropriate therapy for each patient. Second, you should be very compassionate. If you're not going to be compassionate and really care about your patients, you will fail in the long run. This means going to whatever lengths necessary to help them through their illness and make the best decisions that they can. You can't just treat symptoms, you have to treat the whole patient and most often the families.

*ATM: You are the PI of many research grants and the recipient of National Institutes of Health MERIT Awards, so how do you keep passionate in your clinical researches?*

**Prof. Blazar:** That's actually not hard for me because I do clinical care as well. We see sick kids all the time and that really drives the science. For our laboratory, we try to bring new therapies into the clinic as there's nothing more as a driving force than seeing the consequences and side-effects of doing what a marrow transplantation typically in children.

**Cite this article as:** Young L. Prof. Bruce R. Blazar: status, challenge, and prospect of the clinical applications in graft-versus-host disease. *Ann Transl Med* 2019;7(1):17. doi: 10.21037/atm.2018.11.56

## Acknowledgements

We would like to express our sincerest gratitude to Prof. Bruce R. Blazar for sharing his insights and opinions with us.

## Footnote

*Conflicts of Interest:* The author has no conflicts of interest to declare.

## References

1. Young L. Prof. Bruce R. Blazar: status, challenge, and prospect of the clinical applications in graft-versus-host disease. *Asvide* 2019;6:004. Available online: <http://www.asvide.com/article/view/29400>

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