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Graduate School of Biomedical Sciences

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## The Richard O'Reilly Lab

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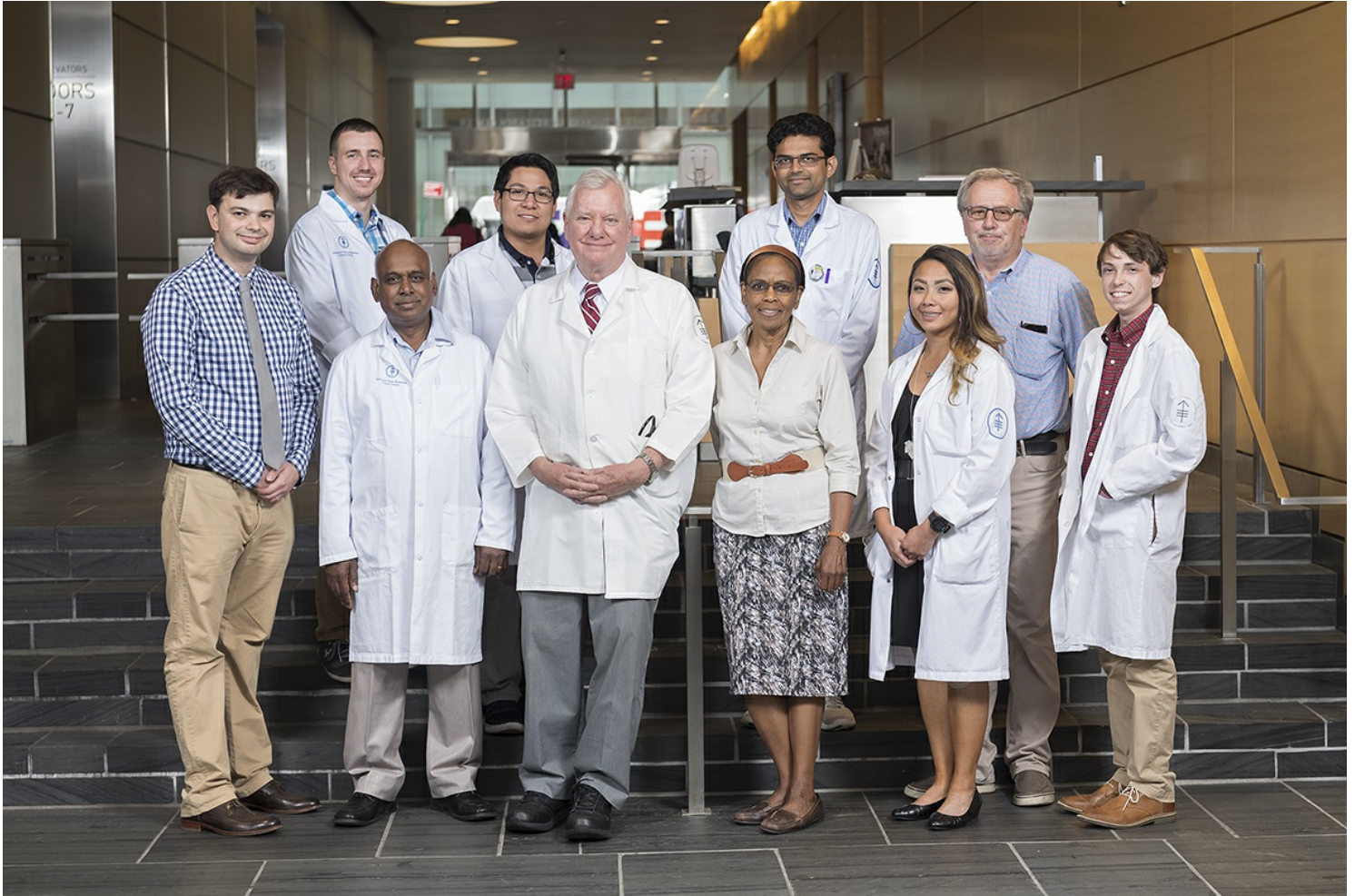
Richard J. O'Reilly, MD

Professor

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Our laboratory has as its goal, the elucidation and therapeutic translation of the genetics and immunology of antigen-specific T-cell interactions with virus transformed and malignant cells that affect their function when used for adoptive immunotherapy in immunocompromised cancer patients and recipients of allogeneic hematopoietic or solid organ transplants. We introduced the use of transplant donor derived T-

cells for the treatment of EBV lymphomas. Subsequently, we have introduced the use of banked, immediately accessible virus-specific 3<sup>rd</sup> party T-cells selected on the basis of their HLA restriction and epitope specificity for the treatment of EBV-associated malignancies and drug refractory CMV infections, as well as TCR selected and CAR modified T-cells for hematologic malignancies. To further enhance the efficacy of these T-cell therapies, we are currently evaluating epigenetic modifiers to increase and sustain tumor susceptibility to adoptive T-cell cell therapy and the biological arming of T-cells to enhance their tumor-specific activity.



## Publications

Doubrovina E, Carpenter T, Pankov D, Selvakumar A, Hasan A, O'Reilly RJ. Mapping of novel peptides of WT-1 and presenting HLA alleles that induce epitope-specific HLA-restricted-T-cells with cytotoxic activity against WT-1+ leukemias. *Blood*. 2012 Aug 23;120(8):1633-46.

Dao T, Yan S, Veomett N, Pankov D, Zhou L, Korontsvit T, Scott A, Whitten J, Maslak P, Casey E,

Tan T, Liu H, Zakhaleva V, Curcio M, Doubrovina E, O'Reilly RJ, Liu C, Scheinberg DA. Targeting the intracellular WT1 oncogene product with a therapeutic human antibody. *Sci Transl Med*. 2013 Mar 13;5(176):176ra33.

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Pai SY, Logan BR, Griffith LM, Buckley RH, Parrott RE, Dvorak CC, Kapoor N, Hanson IC, Filipovich AH, Jyonouchi S, Sullivan KE, Small TN, Burroughs L, Skoda-Smith S, Haight AE, Grizzle A, Pulsipher MA, Chan KW, Fuleihan RL, Haddad E, Loechele B, Aquino VM, Gillio A, Davis J, Knutsen A, Smith AR, Moore TB, Schroeder ML, Goldman FD, Connelly JA, Porteus MH, Xiang Q, Shearer WT, Fleisher TA, Kohn DB, Puck JM, Notarangelo LD, Cowan MJ, O'Reilly RJ. Transplantation outcomes for severe combined immunodeficiency, 2000-2009. *N Engl J Med*. 2014;371(5):434-446.

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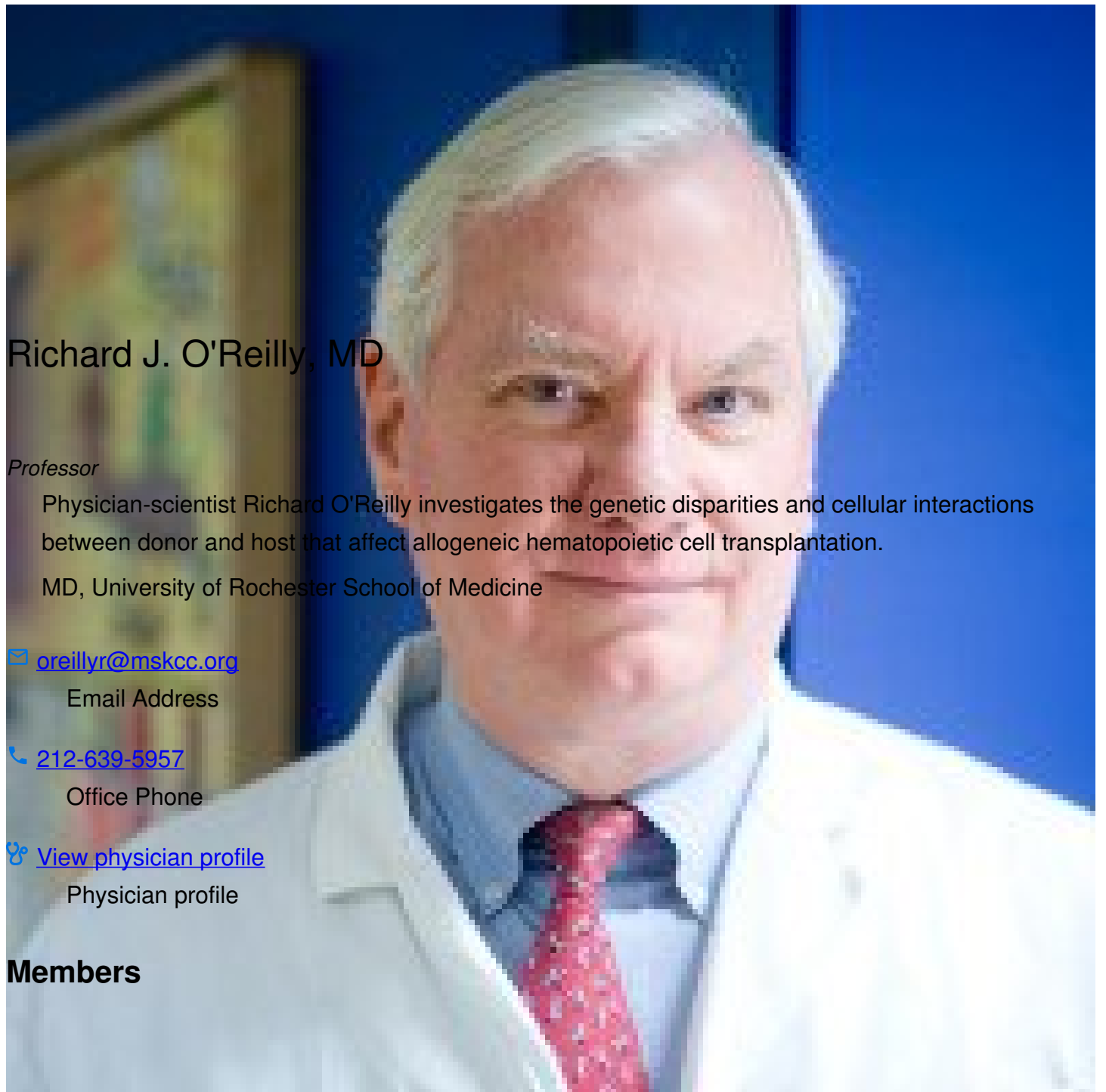
Zhao Q, Ahmed M, Tassev DV, Hasan A, Kuo TY, Guo HF, O'Reilly RJ, Cheung NK. Affinity maturation of T-cell receptor-like antibodies for Wilms tumor 1 peptide greatly enhances therapeutic potential. *Leukemia*. 2015 May 19. Epub ahead of print.

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Koehne G, Hasan A, Doubrovina E, Prockop S, Tyler E, Wasilewski G, O'Reilly R. Immunotherapy with Donor T-cells Sensitized with Overlapping Pentadecapeptides for Treatment of Persistent Cytomegalovirus Infection or Viremia. [Biol Blood Marrow Transplant](#). 2015 Sep;21(9):1663-78.

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## People



## Richard J. O'Reilly, MD


*Professor*

Physician-scientist Richard O'Reilly investigates the genetic disparities and cellular interactions between donor and host that affect allogeneic hematopoietic cell transplantation.


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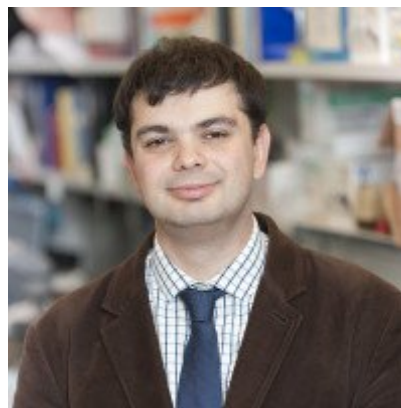


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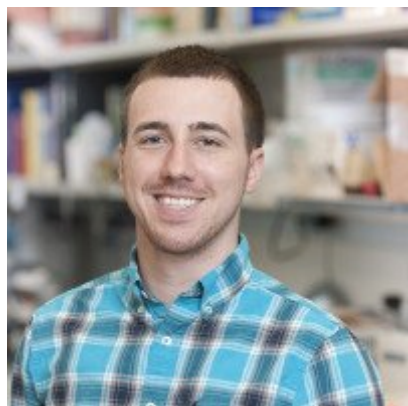
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Dmitry Pankov

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Keith

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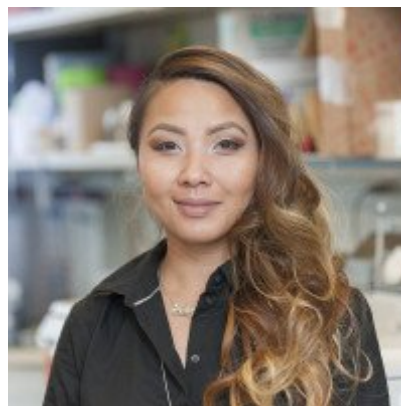
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## Disclosures

Doctors and faculty members often work with pharmaceutical, device, biotechnology, and life sciences companies, and other organizations outside of MSK, to find safe and effective cancer treatments, to improve patient care, and to educate the health care community.

MSK requires doctors and faculty members to report (“disclose”) the relationships and financial interests they have with external entities. As a commitment to transparency with our community, we make that information available to the public.

Richard J. O'Reilly discloses the following relationships and financial interests:

Atara Biotherapeutics

Intellectual Property Rights

Damon Runyon Cancer Research Foundation

Fiduciary Role / Position

Ronald McDonald House New York

Fiduciary Role / Position

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