Eulogy for David White (1946-2017)

delivered by Dr William Wall

at St. John the Divine Anglican Church, Arva, Ontario

on 14th June 2017

David White was my longtime friend and colleague. He was a dedicated scientist whose contributions are rightly measured on a global scale.

Our friendship began more than four decades ago in Cambridge when we were fortunate to share the same mentor, Professor Roy Calne. David was a researcher in Sir Roy’s Department of Surgery. He had just finished his PhD in immunology and he was studying solutions to rejection of transplanted organs. I was there for two years to learn transplant surgery. It was the mid-1970s. We always joked later that he tried his best to teach me immunology and I tried my best to teach him surgery, but neither had great success. David’s keen intellect and breadth of knowledge were immediately evident to me however, as they were to all of his colleagues. He had the ability to see a problem from several perspectives – such an important quality in people committed to research.

The field of transplantation was languishing at that time. Knowledge of rejection was incomplete and methods to control it were inadequate. The clinical results were so dismal that most believed its future was questionable. That all changed the year after I left Cambridge when Sir Roy obtained a completely new drug – cyclosporine – and showed first in the laboratory and then in patients its effectiveness in controlling rejection. Those pivotal studies transformed transplantation into one of the greatest achievements of modern medicine. David was Sir Roy’s closest collaborator in those studies and much research that followed. It was a spectacular success story. Our own Canadian pioneer in transplantation, Calvin Stiller, recognized the potential for this new drug when the first reports from Cambridge began to surface. He knew the importance of obtaining it for use in Canada.

As one would expect with such a major breakthrough, everyone involved in transplant efforts at the time was desperate to get cyclosporine. For transplant specialists, it was the equivalent to getting some of the first samples of penicillin after its discovery.

Well, David White brought to us, in London, the very first sample of the drug to leave the United Kingdom. It was the winter of 1978 when I met David outside the baggage claim of Pearson airport. After exchanging greetings, the first words off my lips were “Did you bring the cyclosporine?” He reached into his breast pocket and with a smile produced a vial of the magic white powder. It was so precious that he did not risk losing it by putting it in checked luggage. But can anyone imagine today trying to board an aircraft with a stash of white powder in your pocket?!! That’s what David did in 1978.
That sample was important, I believe, to Dr. Stiller securing more cyclosporine and conducting in Canada the world’s first randomized trial in kidney patients. The results were as dramatic as expected, and they propelled our centre forward at a particularly exciting time in transplantation. So we, Canada, Canadians are indebted to Sir Roy and David for their willingness to share the drug with us at the earliest time in its remarkable history.

There was an ensuing avalanche of activity worldwide with organ grafts and within several years tens of thousands of patients were taking cyclosporine. It became the cornerstone of immunosuppression for the next 20 years. There was an excellent and fruitful exchange of information between Cambridge and London. David was always open to sharing his latest research, whether in correspondence, on the phone or at meetings – and there were many.

After the success of cyclosporine, David redirected his research at solving what became the most pressing problem in transplantation, namely the inadequate number of donor organs. He approached it with his typical determination and enthusiasm. He produced genetically engineered pigs with the objective of establishing an unlimited source of organs – xenotransplants – transplants between species. He and colleagues in the United Kingdom developed the first transgenic pigs, animals carrying human genes that were meant to protect the organs from destruction by the vigorous immune response that typically defeats attempts at transplants between species. His research was central to our attempts to recruit David to London to occupy the then newly-established Stiller/Novartis Chair in Xenotransplantation at Western. It wasn’t easy for him to leave his beloved Cambridge, but he ultimately accepted the London offer and moved to Canada in December 2000. He had cross-appointments in the Departments of Pathology, Microbiology and Immunology, and Surgery. David had a wonderful capacity to work with others. He was always quick to acknowledge the contributions of others, a particularly appealing trait of David’s.

He must have forgotten the cruel winter from when he visited in 1978 because he arrived with no boots and the thinnest of overcoats. Our housewarming gift for him was a snow shovel! After a single winter of shoveling snow, he did the Canadian thing and bought a snow blower. One year later he exercised good British judgment and hired a snow removal company to keep his driveway clear! Both the shovel and the snow blower continue to gather dust in his garage.

Xenotransplants using genetically modified pig organs have not been successful yet, but recent research using new technology to alter genes – something called CRISPR – may be the answer and the approach follows on David’s original concept. Before he became ill he was studying the use of insulin-producing cells from pig pancreases to cure diabetes. It just might be that another exciting era in transplantation is imminent. And, if that is the case, I believe that David’s full legacy is yet to be written. A few months ago he was notified by the International Xenotransplantation Association that he had been chosen to receive its highest honour. It’s a lectureship named after Keith Reemtsma, the
surgeon who attempted transplants between chimpanzees and humans in the 1960s. David was meant to give the Reemtsma Lecture at the meeting of the Association in Baltimore in September. The citation reads “the lecture will honor an eminent scientist, recognizing her or his contributions to the field of xenotransplantation”. David’s family will accept the honor for him. This was the last of many recognitions for his remarkable contributions.

Conversations with him were always enjoyable. His insightful comments and views on just about any subject revealed an intellectual curiosity that was impressive. He seemed to have an inexhaustible supply of rhymes for just about any occasion. When my sons were young, he entertained them in our home many times with rhyme after rhyme that always kept their full attention. David enjoyed the recitations as much as the children.

The full challenge of recovery from his mouth and neck surgery 18 months ago was a concern to many of us who were familiar with the type of cancer operation he was going to have, especially for regaining the ability to speak afterwards and pronounce words. This was particularly important for David who was an eloquent speaker. But David dealt with it positively and without complaint, essentially learning to speak again. There was never a hint of him trying to obscure any perceived deficit by remaining silent. Rather, he overcame it by deliberately speaking, being as articulate as he could, even at conferences with many in attendance. His resolve was admirable.

By all measures David had a distinguished career. He served on the editorial boards of seven journals, he published extensively and he lectured widely. His research was dedicated to the relief of human suffering. He was a good person, a valued colleague, and a fine friend.

Bill Wall
June 14, 2017
CURRICULUM VITAE

David James Graham White

Professional Address: The Schulich School of Medicine
University of Western Ontario
The Siebens Drake Centre
1400 Western Road
London Ontario
Canada N6G 2V4

Nationality: Canadian/British dual citizenship

EDUCATION:

Dulwich College Preparatory School, 1952-1959
Eleven plus and CSE exams

Epsom College, 1960-1966
11 GCE ‘O’ Levels, 3 ‘A’ Levels

University of Surrey (1966-1969)
Part I Anatomy, Physiology, Biochemistry
Part II Medical Microbiology and Pathology
Qualified as Computer Programmer (Algol 60) 1969
Awarded BSc (Hons) Distinction in Part II 1969

Med. Sci. Tripos 1972
PhD 1975

University of Cambridge Clinical School
Membership of the Royal College of Pathologists 1984
Fellowship of the Royal College of Pathologists 1996
APPOINTMENTS:

Post Doctoral Research Fellow, Department of Surgery, University of Cambridge, 1975-1976.

Assistant Director of Research, Department of Surgery, University of Cambridge, 1976-1979.


Senior Research Associate, Department of Surgery, University of Cambridge, 1979-1984.

Lecturer in Transplantation Immunology, (Associate Professor, tenured) Department of Surgery, University of Cambridge, 1984 - 2000 (Merit award promotion 1990).

Chief Scientific Officer and Co-Founder Imutran Ltd 1986-1996

Therapeutic Area Head and Member of Novartis global Research Board 1996- 2000

Robarts Research Institute Scientist 2000-2007

Novartis/Stillar Professor of Xenotransplantation University of Western Ontario 2000-2012

Director Islet Isolation Laboratory LHSC 2002-2007

Professor Department of Surgery University of Western Ontario 2002-2012

Professor Department of Pathology University of Western Ontario 2002-2013

Professor Department of Microbiology and Immunology University of Western Ontario 2003-2008

Chief Scientific Officer Founder and SAB Chairman Sernova Corp 2006-

Emeritus Professor of Surgery University of Western Ontario 2012-

OTHER AWARDS AND APPOINTMENTS
MRC/CRM Scholarship - 1976
Travelling Fellowship, NIH Bethesda - 1979
Editorial Board, Transplantation - 1981
Organizing Committee, First International Congress on Cyclosporine 1982
Visiting Professor, Northwestern University at Evanston, Illinois - 1982
Officer of the Council of the British Transplantation Society - 1983
Council Member, British Society of Immunology - 1984
Editorial Board, Clinical and Experimental Immunology - 1985
Supervisory Committee, The (International) Transplantation Society - 1986
Scientific Advisory Board, Lazards Bank (Medical Ventures Division) - 1987
Director, Imutran Ltd - 1988
The Panhellenic Nephrological Congress Prize - 1989
Lancet Editorial Review Board - 1990
Scientific Advisory Board Medical Partners Management Corporation - 1990
Elected to Athenaeum - 1990
University of Cambridge merit award - 1990
ESOT award for Science - 1991
Editorial Board, Transplant International - 1992
Editorial Board, Xeno - 1994
Editorial Board, Xenotransplantation - 1994
Editorial Board, Journal of Heart and Heart-Lung Transplantation - 1994
Visiting Professorship, Mayo Clinic - 1995
Medal of Honor Yonsei University College of Medicine 1996
Lakaresallskapet Lecture Swedish Transplantation Society 1998

The George Lecturer in Thoracic Transplantation Vanderbilt University 1998

Member UK government (DTI) Foresight committee for health care 1999

Member BBSRC steering committee on GAIT (Genome Analysis of Agriculturally Important Traits) 1999

Selection board King Faisal International Prize for Medicine 2000

Euro-Transplant Memorial Lecture 2001

Secretaries (USA) Advisory Council on Xenotransplantation 2002 & 2004

Advisory Committee Prince Mahidol Foundation 2003

Ontario Graduate Scholarship Committee 2005

Chairman Sernova Scientific Advisory Board 2006

Supervisory Board Ontario Ministry for Science and Innovation 2008

Fellow of the Royal Society of Medicine 2010

RCPath Governance & Implementation Group 2012

MITACS College of scientific advisors 2013

**Member of:**

British Transplantation Society
British Society of Immunologists
The Transplantation Society
European Society of Organ Transplantation
International Xenotransplant Association
Royal College of Pathologists
The Athenaeum

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**Research Funding for the past 5 years**

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<tr>
<th>Title</th>
<th>Development of Local Immune Protection</th>
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<tr>
<td>Source</td>
<td>National Research Council of Canada</td>
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<tr>
<td>Role</td>
<td>Scientific Director (PI)</td>
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<td>Date</td>
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<td>Amount</td>
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Title Analysis of Islet Neogenesis
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<td>Role</td>
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**Title**: Islet Autografting in Pigs  
**Source**: National Research Council of Canada -IRAP  
**Role**: Scientific Director (PI)  
**Date**: 2009-2010  
**Amount**: $980,000

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<th>Title</th>
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<td>Source</td>
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<td>Role</td>
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<tr>
<td>Date</td>
<td>09/2006 – 08/2009</td>
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<tr>
<td>Amount</td>
<td>$298,183</td>
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**Title**: Co-transplantation of porcine islets and Sertoli cells  
**Source**: Crimson Inc  
**Role**: Scientific director (PI)  
**Date**: 08/2006 – 07/2009  
**Amount**: $3,200,000

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<th>Title</th>
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<td>Date</td>
<td>04/2006 – 03/2009</td>
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<td>Amount</td>
<td>$413,406</td>
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**Title**: Imaging the islets of Langerhans in vivo  
**Source**: Alan Thicke Centre for Juvenile Diabetes  
**Role**: Principal Applicant (PI)  
**Date**: 01/2005 – 12/2006  
**Amount**: $230,000

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<th>Title</th>
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<td>Source</td>
<td>London Health Science Centre</td>
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<td>Role</td>
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<td>Date</td>
<td>09/2004 – 12/2006</td>
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<td>Amount</td>
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**Title**: Studies in xenotransplantation  
**Source**: Canadian Foundation for Innovation  
**Role**: Principle applicant (PI)  
**Date**: 09/2002 – 08/2005
Amount $3,200,000

Title The London Innovarium
Source Canadian Foundation for Innovation
Role Co-applicant
Date 06/2002 – 05/2005
Amount $28,000,000

Students Supervised in the past 5 years

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<th>Name of Student</th>
<th>Program Type</th>
<th>Dates</th>
<th>Degree Received or expected</th>
<th>Year</th>
<th>Project title</th>
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<tr>
<td>Andrew Pepper</td>
<td>Graduate student</td>
<td>06/2007 -07/2012</td>
<td>PhD</td>
<td>2007</td>
<td>Islet function</td>
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<td>Hongji Yang</td>
<td>Graduate student</td>
<td>03/2006 –</td>
<td>PhD</td>
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<td>Andrew Pepper</td>
<td>4th year student</td>
<td>09/2006-04/2007</td>
<td>Bachelors</td>
<td>2007</td>
<td>Xenotransplantation pig-to primate</td>
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<tr>
<td>Kelvin Shek</td>
<td>4th year student</td>
<td>09/2005- 04/2006</td>
<td>Bachelors</td>
<td>2006</td>
<td>Inhibition of vascular rejection</td>
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<td>James Melling</td>
<td>Postdoctoral fellow</td>
<td>05/2005- 08/2007</td>
<td>PhD</td>
<td>2002</td>
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<td>Iram Siddqui</td>
<td>Graduate student</td>
<td>02/2005-06/2009</td>
<td>Masters</td>
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<td>Islet xenotransplantation Induction of tolerance</td>
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<td>Laura Copeman</td>
<td>Graduate Student</td>
<td>01/2005-05/2007</td>
<td>Masters</td>
<td>2007</td>
<td>Modulation of immune responses</td>
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<td>Joo-Ho Tai</td>
<td>Postdoctoral fellow</td>
<td>06/2002-02/2006</td>
<td>PhD</td>
<td>1996</td>
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<td>Rosales Hernandez</td>
<td>Postdoctoral fellow</td>
<td>03/2003-04/2005</td>
<td>PhD</td>
<td>2002</td>
<td>Pig to primate cardiac xenotransplants</td>
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</tbody>
</table>
PUBLICATIONS


De Bono D, MacIntyre D, White DJG, Gordon J. (1977) Endothelial adenine uptake as an assay for cell or complement mediated cytotoxicity. Immunology 32: 221.


Merion RM, White DJG, Calne RY. (1983) Early renal allograft rejection episodes are less aggressive with Cyclosporin A immunosuppression. Transplant Proc 15: 2172-2177.


Lim SM, White DJG, Calne RY. (1988). Unresponsiveness to class I antigens is not equal to tolerance to class I antigens induced by Cyclosporin A. Transplant .Proc. 20:1031


White DJG (1994) Heart Transplantation – Pig hearts with human genes. Cor Europaeum 3:(2) 80


*White DJG* (1998) Transgenic methodologies to humanize a donor. ASH


Taylor CJ, Tang KG, Smith Si, White DJG, Davies HF. (1998) HLA-specific antibodies in highly sensitized patients can cause a positive crossmatch against pig lymphocytes. Transplantation 65: 1634-41


normal and hDAF transgenic pigs. In Isolated Islets of Langerhans Trigger an Instant Blood Mediated Inflammatory Reaction Ed W Bennet Ch IV


Steffen Pfeiffer, MD, George L Zorn III, MD, Kelly SA Blair, MD, Steve M Farley, Guosheng
Wu, MD, PhD, Henk-Jan Schuurman, MD, Agnes M Azimzadeh PhD, David JG White PhD,
Richard N Pierson III, MD. Hyperacute Lung Rejection in the Pig-to-Human Model. Evidence

Teran-Escandon D, Teran-Oritz L, Ormsby-Jenkins C, Evia-Viscarra ML, White DJG,


White DJG Genetic Engineering of pigs to provide organs for xenotransplantation
Current Opinion in Organ Transplantation 11 160-165 2006


Vilk GR. Pepper AR. Mazzuca DM. Hayatsu J. White DJG. Insulin resistance and the presence of thymus independent anti-insulin IgG antibody production. Xenotransplantation 16: 382 2009
Pepper, AR., Gall C, Mazzuca DM, Melling DM and White DJG. Diabetic rats and mice are resistant to porcine and human insulin: flawed experimental models for testing islet xenografts. Xenotransplantation 16: 502-510 2009


Books


Patents:

- Biocompatible Materials pat. no. 8922987 (1989)
- Pharmaceutical formulations pat. no. 9115088 (1990)
- Modified biological material pat. no. 95118520 (1995)
- Adult Sertoli cells pat. no 101106001 (2007)