



**SoH-COHASS WORKSHOP in Medical Humanities**

## **Contextualizing Transplantation: Medicine, Society, and Culture**

**Date:** 16 April 2024 (Tuesday): 1:30 PM – 5:15 PM / 17 April  
2024 (Wednesday): 10 AM – 5:30 PM / 18 April 2024  
(Thursday): 9 AM – 10:20 AM

**Venue:** SHHK Conference Room (48 Nanyang Avenue, SHHK 05-  
57, Singapore 639818) / LKC Medical Library (11 Mandalay Rd,  
Singapore 308232)

## **Schedule:**

16 April 2018 (Tuesday): 1:30 PM – 5:15 PM

Venue: SHHK Conference Room (48 Nanyang Avenue, SHHK 05-57, Singapore 639818)

1:30-1:45 PM

Opening Address: K. K. Luke, Chair, School of Humanities, NTU

1:45-2:45 PM

Keynote Lecture: Thomas Schlich (McGill University): “A New Approach to the Surgical Treatment of Disease: Transplantation and Physiological Surgery”

2:45-3:15 PM

Coffee Break

3:15-4:15 PM

Justin Barr (University of Toronto): “Making Ends Meet: Vascular Anastomoses and Organ Transplant”

4:15-5:15 PM

Ayesha Nathoo (University of Cambridge): “Early Heart Transplants and Medical-Media Histories”

17 April 2018 (Wednesday): 10 AM – 5:30 PM

Venue: SHHK Conference Room (48 Nanyang Avenue, SHHK 05-57, Singapore 639818)

10-10:40 AM

Navin Kumar Verma (NTU): “Suppression of T-Cell Function by Potassium Ionic Checkpoint: Implications for Transplantation Immunology”

10:40 AM-11:40 PM

Hyung Wook Park (NTU): “Riddles of Immunosuppression: Rejection and Tolerance in Thomas Starzl’s Transplantation Research, 1955-1985”

11:40 AM-1 PM

Lunch

1-2 PM

Shelly McKellar (Western University): “Complementary or Competitive Lines of Investigation? The 1960s ‘Dispute’ of Cardiac Transplantation versus Mechanical Implantation to Replace the Damaged Heart”

2-3 PM

Sharrona Pearl (Drexel University): “Face/Off or On? Face Transplants and the Resistance to Categorization”

3-3:30 PM  
Coffee Break

3:30-4:30 PM

Kaori Sasaki (Sapporo Medical University): “The Japanese Development of Organ Transplantation from Brain-dead Donors: Beyond the Differences from the Euro-American Practices and the Myths about Such Differences”

4:30-5:30 PM

Volker H. Schmidt (NUS): “Everyday Triage: Patient Selection Before and After the Use of Scoring Systems, Exemplified in Transplant Medicine”

18 April 2024 (Thursday): 9 AM – 10:20 AM

Venue: LKC Medical Library (11 Mandalay Rd, Singapore 308232)

Special Session: Conversation with Singapore’s Transplant Surgeons (Drs Tiong Ho Yee and Shridhar Ganpathi Iyer at NUH)

## Keynote Speaker:

Thomas Schlich (McGill University):

After working as a resident in internal medicine at the University Hospital in Marburg, Germany, Thomas Schlich had prestigious research and teaching positions in the history of medicine at Cambridge, Stuttgart, and Freiburg. He was awarded a Heisenberg Fellowship of the German Research Council (2000-2002). In 2002 he moved to McGill University where he has held a Canada Research Chair (2002-2012), and since 2012 a James McGill Professorship. Since 2021 he is Chair of the Department Social Studies of Science. He is interested in the history of modern medicine and science (18th-21st centuries), medicine and technology, history of medical innovation, body history. After publishing *The Origins of Organ Transplantation: Surgery and Laboratory Science, 1880-1930* (Rochester, 2010), he focuses on the history of modern surgery (1800 to the present time) and the history of the medical face mask.



## Keynote Lecture:

“A New Approach to the Surgical Treatment of Disease: Transplantation and Physiological Surgery”

The introduction of organ transplantation in the 1880s marks the beginning of a new strategy in the surgical treatment of disease. Before, surgeons typically tried to remove diseased tissue from the patient’s body, for example, in cases of tumors. The new strategy consisted in reconstructing body functions. The new approach went along with a new style in surgery, often called “physiological surgery” for its orientation towards body function and its close relationship to experimental physiology. Within the history of modern surgery more generally, organ transplantation was an important step away from the traditional rationale of surgery as a treatment of last resort in cases of emergencies, usually at the body’s surface, towards the rationale of modern surgery, which is based on the planned treatment of complex internal diseases by deliberate surgical interventions into body structures and functions.

## Presenters:

### Justin Barr (University of Toronto):

Heralding from southern Virginia, Justin Barr obtained his bachelor's degree in history from Washington University in St. Louis. Following a year working as a historian for the US Navy, he earned his MD from the University of Virginia and his PhD in history from Yale University in 2015. Thereafter, he completed training in general surgery at Duke University and is currently a fellow in abdominal transplant surgery at the University of Toronto. His scholarship focuses on the history of surgery and military medical history, with his book *Of Life and Limb: Surgical Repair of the Arteries in War and Peace, 1880-1960* (Rochester, 2019) exploring their intersection.

### Ayesha Nathoo (University of Cambridge):

Ayesha Nathoo is a cultural historian and medical humanities researcher. As the author of *Hearts Exposed: Transplants and the Media in 1960s Britain* (Springer, 2009), she has held Fellowships at the Universities of Cambridge and Exeter, the Wellcome Trust, and the London Science Museum. Her research interests include history of modern medicine, science and medical communication, global health, healing, and wellbeing. She is an Affiliated Scholar of the Department of History and Philosophy of Science, University of Cambridge, and of the Wellcome Centre for Cultures and Environments of Health, University of Exeter.

### Navin Kumar Verma (NTU):

Navin Kumar Verma completed his PhD and postdoctoral training in Clinical Medicine at Trinity College Dublin, Ireland. In 2014, Verma joined the Lee Kong Chan School of Medicine, Nanyang Technological University, Singapore, where he is currently an Associate Professor of Immunology and Cell Biology. His research is focused on T-cell immunology implicated in wound healing and cancer. He has published over 100 papers, which are widely cited with h-index of 37. He has filed 5 patents and won several national and international awards for his work. He is also an elected Fellow of the Royal Society of Biology, UK.

### Hyung Wook Park (NTU):

Hyung Wook Park is Associate Professor of History at Nanyang Technological University, Singapore. The scope of his historical research covers a broad range of topics in science and medicine, including immunology, transplantation, tissue culture, gerontology, and the science-religion interface. After publishing his first book, *Old Age, New Science: Gerontologists and Their Biosocial Visions* (Pittsburgh, 2016), he investigated the rise of antievolutionary movements in Asia, which led to his second book, *Creationism in a South Korean Culture: Science, Religion, and the Struggle against Evolution* (Routledge, 2024). He is now continuing

his longstanding research on transplantation immunology, which has dealt with the studies by Peter Medawar, Frank Macfarlane Burnet, Joseph Murray, and Thomas Starzl. He will broaden the scope of his work by analyzing the global enterprise of organ transplantation.

Shelly McKellar (Western University):

Shelley McKellar is the Hannah Chair in the History of Medicine at the Schulich School of Medicine and Dentistry and a tenured Full Professor in the Department of History and the Department of Surgery at Western University, London, Canada. She is the author of four books - *Transforming Dentistry: The Rise and Near Demise of Dentistry at Western University* (Toronto, 2022), *Artificial Hearts: The Allure and Ambivalence of a Controversial Medical Technology* (Johns Hopkins, 2018), *Medicine and Technology in Canada* (CSTM, 2008), and *Surgical Limits: The Life of Gordon Murray* (Toronto, 2003) - as well as numerous textbook chapters and journal articles on the history of surgery, medical technology, and medical biography.

Sharrona Pearl (Drexel University):

Sharrona Pearl is Associate Professor of Medical Ethics and History at Drexel University. A historian and theorist of the face, Pearl's most recent book is *Do I Know You? From Face Blindness to Super Recognition* (Johns Hopkins, 2023) following *Face/On: Face Transplants and the Ethics of the Other* (Chicago, 2017) and *About Faces: Physiognomy in Nineteenth-Century Britain* (Harvard, 2010). Her book *Mask* is forthcoming in May 2024 with Bloomsbury Academic. Pearl maintains an active freelance practice, with bylines in *The Washington Post*, *The Conversation*, *Real Life Magazine*, *Aeon*, *Tablet*, *Lilith*, *Kveller*, and other places available on [www.sharronapearl.com](http://www.sharronapearl.com).

Kaori Sasaki (Sapporo Medical University):

Kaori Sasaki is a professor at Sapporo Medical University. As a sociologist, her main interest lies on the shaping of bio-politics on humanity alongside cultural (identity) politics. She has explored how organ transplantation from brain-dead donors has developed in Japan in line with Japanese social, legal, and medical articulations of (1) the definition of human death, (2) the meaning of terminal/deathbed care, and (3) the Japanese cultural identity and notions of humanity. Recently, she has been exploring how e-health records could/would be used for secondary purposes, and how such use would affect the articulation of human identity and subjectivity.

Volker H. Schmidt (NUS):

Volker Schmidt is Professor of Sociology at the National University of Singapore. He has held a Kennedy Memorial Fellowship at Harvard University and further long-term fellowships at the universities of Münster (twice) and Bielefeld. The author or co-author of seven books and editor or co-editor of another four volumes, Schmidt has published over 100 journal articles and book

chapters. His main areas of specialization are the sociology of justice, social policy, social theory, and global social change. His most recent accomplishment is the completion of a book-manuscript titled *From Societas to World Society. Genealogy of a Concept*, which covers 2,500 years of intellectual history.

## Abstracts:

### *“Making Ends Meet: Vascular Anastomoses and Organ Transplant”*

By Justin Barr (University of Toronto):

Since antiquity, physicians struggled to manage bleeding patients. Interventions included topical medications, tourniquets, and vessel ligation – and changed little over millennia. With the 19<sup>th</sup> century surgical renaissance, clinicians around the world began exploring methods to repair rent vessels directly. The scope and variety of different approaches underscore the international interest in this field, with Alexis Carrel and Charles Guthrie garnering the most acclaim for their Nobel Prize-winning triangulation technique. Surgeons rapidly recognized that the same operations to repair traumatically damaged blood vessels could also be used to re-connect healthy ones. This realization catalyzed renewed interest in organ transplantation, with hundreds of animal experiments demonstrating its technical feasibility. Popular interest in its potential exploded. But even technical perfection failed to make transplant a reality. Despite successes at auto-transplant, attempts to move organs from one animal (or human) to another failed, largely due to what we now know as immune rejection. Ultimately, successful organ allotransplantation required an entire spectrum of developments, where technical advances combined with basic science investigations into immunology alongside a new socio-ethical framework created a milieu where the operation could take off and successfully transform thousands of patients’ lives.

### *“Early Heart Transplants and Medical-Media Histories”*

By Ayesha Nathoo (University of Cambridge):

1968 is widely recognized by historians to have been globally one of the most politically unsettled years of the post-war era. It was certainly not a year short of news. Yet, throughout the year, a story from within the traditionally reticent medical profession was continually making headlines – the story of human heart transplantation. The world’s first such operation by the South African surgeon, Christiaan Barnard, in December 1967, ushered in the “year of the heart transplant” when over 100 of these pioneering transplants were performed in 18 countries by 47 different medical teams. These surgical feats received media attention that was unprecedented for a medical undertaking, and commenced a new era of doctor and patient celebrities, post-operative press conferences and medical PR. Just as these high-profile operations fundamentally changed the course of medical-media relations, I argue that the media spotlight on the medical, socio-political, human interest and ethical dimensions to these remarkable stories changed the course of heart transplant history. With most of the early heart-transplant recipients dead within days or weeks of their revolutionary surgery, from the end of 1969 the procedure was all but abandoned for a decade or more. In this talk I will introduce and summarise key arguments drawn from my cultural historical work. I will end with a discussion of the ways in which my analysis could be extended to include India’s first heart transplant in February 1968, that has until recently received scarce scholarly attention.



*“Suppression of T-Cell Function by Potassium Ionic Checkpoint: Implications for Transplantation Immunology”*

By Navin Kumar Verma (NTU):

Potassium ions (K<sup>+</sup>) released from dying necrotic tumor cells accumulate in the tumour microenvironment and increase the local K<sup>+</sup> concentration to 50 mM (high-[K<sup>+</sup>]<sub>e</sub>). Here, we demonstrate that exposure to high-[K<sup>+</sup>]<sub>e</sub> inhibits T-cell receptor (TCR)-mediated signalling by decreasing expression of the TCR complex and the costimulatory receptor CD28. High-[K<sup>+</sup>]<sub>e</sub> also alters T-cell metabolic profiles, limiting glucose and glutamine metabolisms. These changes skew T-cell differentiation, favouring Th2 and Treg subsets while restricting Th1 and Th17 subsets. Since alloreactive T-cells play a vital role in transplant rejection, our results support the notion that targeting T-cell K<sup>+</sup> channels would be beneficial to transplant patients.

*“Riddles of Immunosuppression: Rejection and Tolerance in Thomas Starzl’s Transplantation Research, 1955-1985”*

By Park Hyung Wook (NTU, organizer)

This presentation discusses how twentieth-century transplantation practices, especially by the American surgeon Thomas E. Starzl, revised the standard immunological theory on tolerance and the distinction between “self” and “non-self,” proposed by two Nobel laureates, Frank Macfarlane Burnet and Peter Brian Medawar. Without being concerned about the theories on the formation of immunological specificity pursued by Burnet and Medawar, Starzl investigated how immunosuppressive regimes could prevent organ rejection through his kidney and liver transplantation project in Denver and Pittsburgh. He did this through various medications that suppressed patients’ immune system, such as azathioprine, prednisone, antilymphocyte globulin, cyclosporine, and tacrolimus. However, his intensive quest to find more “powerful immunosuppressants” faced a contradiction because such medicines would inevitably weaken the body’s defense against pathogenic microbes, neoplasm, and other mishaps. I argue that this problem was addressed in an unexpected way, especially through his human subjects’ experiences during their life course in America’s privatized healthcare system. Their voluntary or involuntary renunciation of Starzl-prescribed immunosuppressants revealed how their bodies could coexist with transplanted organs by becoming genetic chimeras, which were not anticipated by Burnet and Medawar’s theory on immunological self and tolerance.

*“Complementary or Competitive Lines of Investigation? The 1960s ‘Dispute’ of Cardiac Transplantation versus Mechanical Implantation to Replace the Damaged Heart”*

By Shelly McKellar (Western University)

The experimental procedures of human heart transplantation and artificial heart implantation became intertwined in the 1960s, traversing similar issues, surgeons, and patient populations, and

erupted ‘disputes’ within the American medical community. How best to replace the damaged heart that could not be surgically repaired—with a transplanted human heart or an artificial heart implant? Some researchers in the field preferred one approach over the other, but in the end, the two procedures were used in complementary, rather than competing, ways. Initially, artificial heart researchers envisioned these devices as an independent therapy, either temporarily as a bridge to recovery after surgery or permanently as a replacement device for the failing natural heart. The lure of artifact hearts persisted due to the challenges and uncertainties of human heart transplantation during the 1960s and 1970s. Despite complex difficulties, human heart transplantation nevertheless strengthened legitimacy for cardiac replacement therapy. There was room for mechanical implantation alongside human heart transplantation in the emerging field of cardiac replacement. This relationship became tighter with the creation of a new role for artificial hearts as bridge-to-transplant devices. It was a contentious role for mechanical devices, which complicated, rather than resolved, several issues raised by heart transplant operations, most notably the shortage of donor organs and priority status for device-implant patients on long waiting lists. But for most artificial heart researchers, the use of mechanical devices as bridge-to-transplantation helped to support their grander aims of developing artificial hearts for longer-term and permanent use. Allied with the heart transplant community in these ways, artificial heart researchers sustained funding, expectations, and a broader medical base, and this reinforced the promise of cardiac replacement. In the end, the medical profession situated human heart transplantation and mechanical heart implantation as complementary, rather than competitive, lines of investigation.

*“Face/Off or On? Face Transplants and the Resistance to Categorization”*

By Sharrona Pearl (Drexel University)

Both like and not like cosmetic surgery and whole organ transplants, facial allografts have proven difficult to categorize. This talk will show how bioethicists, surgeons, and journalists have conceptualized face transplants as neither and both, and the resulting stakes for each. Paying particular attention to the media coverage of Isabelle Dinoire’s partial facial allograft in 2005, Pearl will discuss the implications of the cosmetic frame and the whole organ frame for the bioethical debates around FAT.

*“The Japanese Development of Organ Transplantation from Brain-Dead Donors: Beyond the Differences from the Euro-American Practices and the Myths about Such Differences”*

By Kaori Sasaki (Sapporo Medical University)

Japanese transplantation is widely regarded as different from elsewhere. The question accordingly arises as to the reason for this difference. Many earlier works, including Margaret Lock (2001), have given a clear explanation of the Japanese situation regarding organ transplantation from brain-dead donors; this includes answering the above question. However, most of them have relatively endorsed the myths that circulate in Japanese society about the reason for this uniqueness. My talk therefore aims to explore how such myths have been articulated alongside the actual formation processes of the so-called unique Japanese organ

transplantation from brain-dead donors. Specifically, I shed light on the development of these different conditions and conceptions, many of which were encompassed by a range of very modern socio-cultural contexts. Among these, this presentation focuses on the following three topics. Firstly, I examine the so-called Japan's unique legal definition of brain death. Whereas many scholars explain that it owes much to traditional Japanese notions of family and death, this presentation highlights the importance of three modern socio-legal and socio-medical contexts. Secondly, I explore how Japanese neurologists and neurosurgeons play a crucial role in determining how to diagnose brain death whilst previous studies have not given them enough attention. Thirdly, I discuss the gift relationship in organ transplantation. Many earlier works demonstrate that transplantation evokes the traditional Japanese gift relationship, which invites Japanese reluctance to donate organs to others. Whereas such traditional factors may be important in this area, my presentation argues for the importance of other modern socio-cultural contexts. I describe how media representations, popular culture, and a kind of invention of tradition have also been tacitly inscribed into the common understandings of humanity, organ economy, and gift relationships, which arguably reflects a kind of hesitancy towards organ donation and/or transplantation.

*“Everyday Triage: Patient Selection before and after the Use of Scoring Systems, Exemplified in Transplant Medicine”*

By Volker H. Schmidt (NUS)

Abstract: The presentation gauges the recent history of patient selection for treatment of catastrophic disease under conditions of scarcity. The problem was brought to the attention of a broader public in the early 1960s when technologies became available for the prolongation of imperiled lives. A prominent example is dialysis in the experimental stage. Owing to a demand for this life-extending treatment that far exceeded the initial supply of machines, tragic choices had to be made among the pool of potential beneficiaries. Belding Scribner, who pioneered the technology's development, realized that the decision as to who should live and who must die is not a medical decision. He therefore set up a selection committee composed of medical laics. The criteria used by these citizens in what became known as the “Seattle God Committee” were revealed by a journalist who sat in on several of its meetings. The article she wrote about it triggered debates about how such decisions ought and ought not to be made. It also inspired empirical research about actual selection practices in related situations such as the allocation of donor organs in transplant medicine and admissions to beds in intensive care units. As it turned out, decisions were often made ad hoc and at the full discretion of the physicians in charge. Later, partly in response to various scandals and a better understanding of the non-medical nature of these decisions, they became increasingly formalized in scoring systems that took some of the discretion out of the hands of the medical profession. The presentation sheds light on this development in transplant medicine, drawing on case studies from the USA, Germany and Singapore.