# Dr Robin Williams

## Photography, Innovation and Multidisciplinary Leadership

Few professional lives successfully span science, medicine, technology, higher education, public policy, philanthropy and the arts. Fewer still produce significant and lasting contributions within each of these fields. The career of Robin Williams is remarkable, not merely for its breadth, but for the repeated emergence of leadership, innovation and influence across many disciplines.

Photographer, medical researcher, communications pioneer, educator, university Dean, fundraiser and consultant, Williams has repeatedly occupied the frontier between art, science and technology. Over more than fifty years he has made internationally recognised contributions to medical imaging, educational technology, digital communications and education. Yet throughout these varied achievements one commitment has remained constant, photography – it has been both the foundation and the unifying principle of his life.

Born in England, Williams developed an attachment to photography almost as soon as he could hold a camera. His father, a former theatre lighting director, introduced him to the expressive power of light and to the craft of photography. By the age of eight he was developing prints in a family bathroom converted into a darkroom, and by adolescence photography had become both his passion and his identity. He established a darkroom at home, worked in a professional photographic studio, founded a school camera club and photographed landscapes, church interiors and portraits. School fundraising events regularly saw him operating temporary portrait studios, photographing hundreds of local families. Even at this early stage the characteristics that would define his later career were already visible: intellectual curiosity, technical experimentation, entrepreneurial initiative and a fascination with the relationship between observation and understanding.

Although expected to pursue photography professionally, Williams developed an equally strong interest in human biology. Rather than choosing between art and science, he discovered the field of medical photography, which allowed him to combine both. Thus began his first career – as a practising photographer. Williams is quoted as saying “I was never happy with the idea of being a commercial photographer, I wanted to use my God given talents for the betterment of humankind.”

His university studies in scientific and medical photography were combined with long periods of ‘on the job’ training. At GEC Marconi research labs he was exposed to a broad range of imaging techniques, including high-speed photography, holography, photomicrography, thermography, ultraviolet and infrared imaging and photogrammetry. At Addenbrooke’s Hospital in Cambridge he learned the demanding disciplines of clinical photography, surgical and pathological documentation. Working alongside distinguished scientists and clinicians, he acquired an understanding not only of photographic technique but also of medicine, anatomy, ethics and human dignity.

Following graduation with honours in both scientific and medical photography, Williams joined Westminster Hospital Medical School as a State Registered Medical Photographer under Dr Peter Hansell, one of the founders of modern medical photography. The Westminster department was widely regarded as the leading medical photography unit in the world, and it was here that Williams began to establish an international reputation.

During five years at Westminster he photographed approximately 12,500 patients, 1,500 surgical operations, 1,000 autopsies and 2,000 pathological specimens. Working mostly with large-format cameras and sheet film, he developed a level of technical precision and consistency that became the foundation for his subsequent research. His investigations produced innovations in orthographic photography, specimen photography, immersion methods for increasing depth-of-field, control of

photographic scale, incident illumination microscopy and clinical measurement techniques. These advances were published in peer-reviewed journals and adopted internationally (Williams has over 70 publications in books and peer-reviewed Journals). During this intense period of professional activity, and at a ridiculously young age, Williams achieved Fellowships of the Royal Society of Medicine. The Royal Photographic Society, the British Institute of Professional Photography, the Institute of Medical and Biological Illustration, and the Biological Photographic Association of America.

One of his earliest research achievements involved the development of a method for photographing super-cooled blood within cardiac hypothermia pumps. The technique documented erythrocyte crenulation for the first time and contributed to improved methods of open-heart surgery. This work earned him a Gold Medal and Fellowship of the Royal Microscopical Society.

His most influential scientific contribution was the development of photographic methods for measuring three-dimensional shape and surface form in living patients. Through the creation of contour maps of the human body, Williams developed techniques that enabled accurate measurement of shape, volume and anatomical change. These methods transformed clinical practice. They were adopted internationally for facial reconstruction surgery, burns management, scoliosis treatment and cancer therapy. Hospitals in the United States, Canada, Japan, South Africa and Australia incorporated his techniques into patient care. The significance of this work was acknowledged through numerous honours, including the *British Medical Journal* Award, *The Lancet* Award, the *Williamson Research Medal* of the Royal Photographic Society and the *Combined Royal Colleges' Medal*. The latter distinction, jointly awarded by the Royal College of Physicians, the Royal College of Surgeons and the Royal College of Obstetricians and Gynaecologists, is widely regarded as the highest honour in medical imaging.

Remarkably, the images developed for clinical measurement also came to be recognised as works of art. They entered public and private collections throughout Europe and Asia and were reproduced internationally in hundreds of publications including *The Sunday Times*, *National Geographic*, *New Scientist*, *Reader's Digest, World Medicine* and *Time-Life*. These works exemplified a recurring theme throughout Williams' professional life: the capacity for scientific imagery to possess both analytical and aesthetic value.

His research extended into forensic, anthropological and dermatological photography. He developed a telecentric imaging system that enabled accurate measurement of skeletal remains in the crypt of St Bride's Church in London and pioneered reflected ultraviolet photography that revealed latent skin pigmentation invisible to the naked eye. His work on ultraviolet photography became one of the most cited studies in the profession and received the award for the best published paper in 1989.

At the age of only twenty-seven Williams was appointed Director of Medical Illustration at Charing Cross Hospital Medical School, becoming head of the largest department of its kind in Europe. The appointment represented an extraordinary rise through the profession. In only five years he had progressed from medical photographer to director of one of the world's leading departments. His responsibilities extended far beyond photography. He managed photographers, medical artists, designers, television producers, audiovisual specialists, educational technologists and communications staff. He introduced instructional design into medical education, integrated library, computing and media services and designed new teaching facilities. By 1984 his department had established one of Britain's earliest Apple Macintosh networks for desktop publishing and computer graphics.

Perhaps his most visionary achievement was the conception and implementation of the world's first fully interactive educational television network based on fibre-optic technology. Designed to connect London's major teaching hospitals, the system enabled full-motion, high-quality, two-way audio and video communication between multiple sites. At a time when existing telecommunications systems were incapable of supporting such demands, Williams and his colleagues recognised that fibre-optic cable offered the solution. He assembled multidisciplinary teams, secured government and industry support, supervised installation work in the tunnels of the London Underground and helped create what would later become recognised as the first broadband communications network.

The project anticipated one of the defining technologies of the modern world. Its success attracted international attention. Williams was invited to present keynote addresses internationally, including at the National Broadcasters Convention in the United States, and the technology was gradually adopted by broadcasting industries in Europe and North America. He was inducted as a Fellow of the Academy for Television Arts and Sciences and awarded a Fellowship of the Institute of Scientific and Technical Communicators. The work earned him and his medical school a second *Combined Royal Colleges' Medal*, making him the first person to receive this prestigious award twice — to this day a unique achievement.

Throughout the 1980s Williams repeatedly demonstrated an ability to anticipate technological change. His influential lecture, *Silicon or Silver: The Future of Photography*, delivered at the World Congress in Dallas, Texas, in 1983, accurately predicted the digital transformation of photography nearly a decade before the commercial arrival of professional digital cameras. He led some of the earliest experiments in digital imaging and high-definition television.

In 1990 he co-founded the National Centre for Facial Recognition and Identification, developing systems for three-dimensional measurement of faces and skulls. This work contributed to forensic science and later informed his extensive work as an expert witness in Australian courts.

At the same time Williams was emerging as one of the leading educators in his profession. He established the first distance-learning program in medical photography under the auspices of The London School of Medical Photography in partnership with the Institute of Medical Illustrators, founded the IMI Cambridge Summer School, edited *The Medical Photography Study Guide* and served as Chief Medical Photography Examiner for the British Institute of Professional Photography. He lectured and ran workshops internationally, organised world conferences, chaired professional organisations and contributed to educational programs throughout Europe, North America and Australasia. His professional achievements were recognised through numerous international honours, including the *Norman Harrison Medal*, the *Presidential Award of the British Institute of Professional Photography*, the *Louis Schmidt Medal* in the United States and honorary fellowships in Sweden and Germany.

When Williams accepted appointment as RMIT University's first full Professor in 1992, he began what would become a second career – as an academic – and re-located to Australia.

True to character within two years he transformed the Department of Photography into the Department of Visual Communication by bringing together previously separate disciplines. Recognising the significance of digital convergence long before it became widely understood, he developed new academic programs in multimedia, interactive media and digital communications. He established the *Apple Creative Media Centre*, the *International New Media Centre* and subsequently the *Interactive Information Institute*. The Institute became an internationally recognised centre for virtual reality, visualisation, industry collaboration and innovation. The Institute pioneered AI for design and development; General Motors Holden used the Institute during development of the Monaro motor vehicle. Australian Rail Training employed its simulation

systems, while local governments developed interactive three-dimensional city models for planning and urban development.

Williams also introduced the world's first collaborative, multidisciplinary, doctoral model, bringing together PhD students from architecture, business, design, psychology and information technology to work simultaneously on common problems while retaining independent research programs. His work attracted substantial industry funding and international attention. The Telstra-supported SOHO project received the *Business-Higher Education Round Table Award* for Australia's most outstanding collaboration between universities and industry.

His expertise led to appointments advising governments of differing political persuasions at state and federal levels. He worked with Prime Minister Paul Keating on the Creative Nation initiative, advised Premier Jeff Kennett on Victoria's multimedia policy, he served on The National Information Economy Advisory Board, The national Industry Research and Development Board and the IT Skills Task Force. He served on many industry advisory bodies concerned with the information economy and communications and was appointed a Fellow of The World Futures Society. UNESCO appointed him Professor of Communications for the Asia-Pacific region, where he assisted governments throughout Southeast Asia and Oceania in the development of educational technologies, online learning and communications systems.

In December 1998 Williams was invited to become Executive Dean of the Faculty of Art, Design and Communication at RMIT. As part of the University's senior leadership team this position involved the direction, management and academic leadership of one of the largest and most comprehensive faculties of its kind in the world. His stewardship of the Faculty followed a series of institutional mergers which had more than doubled the operational size of the Faculty and shifted the balance from almost exclusively higher education to 50:50 higher education and technical and further education. Despite having a good reputation, the 'new' Faculty faced enormous challenges including a significant financial deficit position, many post-merger complications and a lack of planning for a sustainable future. Williams was responsible for approximately 10,000 students, more than 600 staff and over one hundred academic programs organised within five Schools and several research centres, he guided the faculty through a period of growth, international engagement and increasing research excellence. The Faculty had an annual budget of $60 million, 40% of which was raised from sources outside of government.

Williams's skills in being able to translate complex issues into simple engaging messages combined with his ability to facilitate productive conversations gained particular prominence with his Dean's role in the university. He acted as the University Orator and Master of ceremonies and facilitated discussions, round tables and conferences for hundreds of business, cultural and educational institutions. For many years he hosted the Business Achievement Awards for the Victorian Government and facilitated local government economic development forums. He has given over 400 presentations and keynote addresses – unsurprisingly his skills as a public speaker began at school, where he won the O' Neil Public Speaking Prize and represented the King Edward VIth School successfully in the UK National Public Speaking competition organized by the English Speaking Union.

Following his period as Dean, Williams embarked upon what would become his third professional career. Recognising his exceptional ability to build relationships, communicate institutional vision and secure external support, RMIT University's Vice-Chancellor invited him to lead a new portfolio encompassing a broad range of externally facing activities, including international partnerships, study abroad programs, university events, protocol, alumni relations, fundraising and institutional advancement. While many of these areas were already established, fundraising and alumni engagement were effectively start-up operations that required both strategic vision and organisational leadership. Williams approached fundraising not as a transactional activity but as an extension of the educational mission of the university. He regarded philanthropy as the creation of

productive relationships between generous individuals and institutions engaged in important social, educational and scientific work. This philosophy would become a defining characteristic of his advancement career. Under his leadership RMIT's philanthropic revenue increased by ninety-four per cent, while the University's perpetual endowment grew from approximately $5.9 million to $22 million in the first three years. Williams quickly established a reputation as one of Australia's leading educational fundraisers, particularly in creating successful advancement operations where none had previously existed. He was subsequently head hunted for the role of Director of Advancement within the Office of the Vice-Chancellor at La Trobe University and then later still by Global Philanthropic, a prestigious international consultancy, as their Senior Consultant in Melbourne. His consulting career further extended this influence. Working with universities, schools, hospitals, cultural organisations and charities throughout Australia and New Zealand, he advised institutions on strategy, campaign development, donor relations and organisational capacity. His clients included the University of Melbourne, the University of New South Wales, the University of Tasmania, Victoria University of Wellington, the Melbourne Symphony Orchestra and numerous independent schools and charitable organisations.

For Williams, fundraising represented another form of communication and leadership. Just as his earlier careers had connected photography with medicine, or technology with education, his advancement work connected philanthropic ambition with academic excellence. Although often overshadowed by his earlier achievements in photography, medicine and technology, Williams' contributions to educational philanthropy represent another significant chapter in a life distinguished by repeated reinvention and leadership. In helping universities and cultural institutions secure the resources necessary to fulfil their missions, he once again demonstrated his ability to bring together people, ideas and institutions in pursuit of long-term social benefit.

In all his professional roles Williams never regarded the position description as the job; he saw it as merely the starting point, the opportunity to re-envisage a better future, build a high performing team and deliver great outcomes for employers, employees and society.

Yet despite his numerous careers and roles, photography remained Williams's enduring identity.

He continued to teach photographers, supervise students, support photographic education and contribute to the profession. As Chair of the Academic Board of the Photography Studies College in Melbourne, he helped guide the institution's development into Australia's leading specialist photography college.

In recent years he has returned fully to photographic practice. Together with his wife, the highly awarded photographer Gigi Williams, he has built a successful landscape and nature photography business, producing books, exhibitions, workshops and photographic projects throughout Australia and internationally. He has already had great success in many international competitions in this genre including: the SanDisk Landscape Awards, the Epson International Panorama Awards, the International Colour Awards, the International Fine Art Photography Awards, the International Landscape Photographer of the Year, the UK Landscape Photographer of the Year, the Wilderness Photographer of the Year and overall winner of the International Garden Photographer of the Year. In his Artist's Statement Williams says "The artist and the scientist in me are always in restless juxtaposition. As a medical photographer I was required to be objective and to make not just faithful reproductions, but ones which were consistent and accurate to the extent that measurements could be taken from them. And yet amidst this pure science I found beauty – images that were both tools of investigation and also an expression of pure natural splendour. At their most harmonious the artist and scientist in me allow me to capture a faithful image that also engages the viewer in the sheer beauty of the natural world. The greatest reward is when a viewer connects with an image emotionally: when they say they wish they had been there."

Few individuals have made internationally recognised contributions in so many fields: medicine, photographic science, educational technology, digital communications, university leadership, public policy, philanthropy and professional photography. Williams's innovations in three-dimensional medical imaging improved patient care internationally. His work in fibre-optic communications anticipated broadband technologies decades before their widespread adoption. His predictions concerning digital photography proved remarkably accurate. His leadership helped establish multimedia and digital design as important academic and economic fields in Australia. His educational initiatives influenced generations of photographers, researchers and students. Perhaps most remarkably, these achievements were not separate careers so much as successive expressions of a consistent intellectual approach: curiosity, visual thinking, technological imagination and a profound belief in the power of communication.

Yet throughout these accomplishments photography remained the constant core of his life. It provided the means by which he explored medicine, understood technology, educated students, led institutions and expressed his understanding of beauty.

Dr Robin Williams' career demonstrates that the boundaries between artist and scientist, educator and practitioner, technologist and humanist are often artificial. He has spent a lifetime crossing those boundaries and, in doing so, has made contributions whose breadth is as remarkable as their depth. As both artist and scientist, he has shown that photography can unite evidence and emotion, precision and creativity, observation and imagination.

His life stands as an extraordinary example of what can be achieved when intellectual curiosity, visual understanding and lifelong passion are brought together in the service of knowledge, innovation and human understanding.