Promoting Excellence, Building Trust:  
The Alexander von Humboldt Foundation and the Australian-German Research Partnership

Speech by the President of the Alexander von Humboldt Foundation,  
Prof. Dr. Helmut Schwarz, on the occasion of his visit to  
the Faculty of Science, University of Melbourne,  
Melbourne, Australia, January 30, 2012

Respected Dean of Science, Professor Saint,  
Consul General, Dear Mrs. Anne-Marie Schleich,  
Dear Professor O’Hair,  
Colleagues,  
Ladies and Gentlemen:

When Richard O’Hair and I corresponded about my upcoming visit to Melbourne a few months ago, we quickly agreed that I would give two talks in this wonderful city: one on science, discussing my work as a chemist at the Technical University Berlin; and one talk, this talk, in my capacity as President on the Alexander von Humboldt Foundation, sharing my thoughts on the guiding principles of this German funding organization and discussing the impact of its work on the international academic community, including your community here in Melbourne and Australia. Two keywords mark the title of my talk, and I can assure you that they will play an important role in what I have to say: “excellence” and “trust”. By “excellence”, I mean individual excellence; by “trust” I mean both trust in individual researchers and their capabilities and international trust, the building of international communities of researchers who come together to engage in dialogue over questions of our time. In what follows, I wish to comment on the connection between the sponsorship of individuals and the building of international research partnerships from a Humboldt perspective. This will involve thinking about the role of fundamental research and individual researchers in today’s knowledge societies and the role that funding schemes and mechanisms play in shaping the environment for exploration and exchange. I will introduce you to the Alexander von Humboldt Foundation in this manner, but I hope that my reflections will also encourage discussion in this room. It is a pleasure to be here, and I am looking forward to your questions following my remarks.
Let me begin with Alexander von Humboldt, the Foundation’s eponym and a role model for “individual excellence” at his time. Alexander von Humboldt was a universal genius as a researcher, scientist and explorer. He made crucial contributions to various academic disciplines, such as chemistry, geography, geology and botany. He encouraged international scholarly exchange through travel, discussion, and an astounding correspondence comprising 50,000 letters that he wrote as well as over 100,000 addressed to him. In a way, he even anticipated today's communication culture. I am sure that Humboldt would have been delighted to join Facebook! But he was not only a genius in networking. Above all, as an enlightened citizen, he was far ahead of his time with its usually one-sided colonial view on humankind. In contrast, throughout his life, Humboldt insisted on the “unity of the human race” and objected to “every annoying assumption of the existence of superior and inferior human races”. The lengthy research journey through the Americas, which he undertook with his friend Aimé Bonpland from 1799 to 1804, has rightly been called a “second, peaceful discovery of America”.

The masterwork of his old age, the five-volume “Cosmos: Sketch of a Physical Description of the Universe”, has remained unique in its comprehensive approach. Humboldt’s holistic view on nature, however, was far from being romantic. As a researcher, he was very much aware of the fact that his work was just a beginning, and that there was an enormous workload left to be done. Rather like Isaac Newton, who once compared himself with a boy playing with shells “whilst the great ocean of truth lay all undiscovered before me”, Alexander von Humboldt wrote: “With an extension of knowledge, the feeling of the immeasurableness of the life of nature still increases, and it will take the bold scientific conqueror's inquiries thousands of years to reveal the secrets.” Humboldt was taking extraordinary risks when exploring hitherto unknown territories and seeking to enrich the knowledge of humankind. He never had the privilege of travelling to Australia. One of his favourite projects was an expedition to and through Asia. However, lack of money and, finally, his growing age did not permit him to translate this life-long dream into reality. Humboldt knew only too well the physical limitations caused by aging. This was one of the reasons why he was such a resolute supporter of ambitious, highly talented and dedicated young researchers.

In 1860, the year after Humboldt’s death, the first foundation named after him was established in memory of this great scholar aimed at promoting the ideals he himself had lived for: to conduct research, embark on scientific expeditions and support young academics. The foundation was funded by private donations mostly from abroad, in particular from Academy members in London, Paris and St. Petersburg. In 1923, however, it lost all its assets in the course of inflation. Later, during the Nazi period the history of the Humboldt Stiftung is – as that of most institutions in Germany – a dark
chapter in the country's history. In 1953, in the aftermath of World War Two, at the suggestion of Humboldtians from abroad, today’s Alexander von Humboldt Foundation was set up by the young Federal Republic of Germany. Now, the Foundation represented a country reaching out its hand to the people of the world asking for reconciliation – reconciliation through the exchange of scientists and scholars. And so, historically speaking, with its inception in 1953 and under the influence of the three Nobel Laureates Werner Heisenberg, Feodor Lynen and Wolfgang Paul as the first Presidents, the Alexander von Humboldt Foundation embarked on a mission of “trust”. Its work in the realm of science funding was governed by the notion, and be this only a utopian dream, of people living in peace and the peaceful advancement of humankind. In a nutshell, science and scholarship were seen and used as a “diplomacy of trust”.

We know today, that science and the way scientists interact with each other indeed had a significant impact on overcoming the political division of Europe and the world, and it is certainly not exaggerated to state that in the political arena, science can sow the seeds of such a diplomacy. For more than half a century, with its network of research fellows and award-winners, the Alexander von Humboldt Foundation has been building bridges and fostering a network of trust. In academics, but also beyond academics, this network reaches far into the civil societies of more than 130 countries. It is based on the individual experiences made during the fellows’ stay in Germany, it derives from a better and deeper understanding of our country's history, most importantly it relies on faith in individuals, on learning from one another, and – last but not least – it depends heavily on long-term relationships. In this manner, this network of scientists contributes to prepare the soil for day-to-day political and economic action. In fact, the Humboldt-network has become an indispensible element in Germany’s international academic relations, a crucial factor in the continuous rejuvenation of science in Germany, and an important element in fostering sustainable development in threshold and underdeveloped countries all over the globe.

Today, the Alexander von Humboldt Foundation comprises a network of well over 25,000 members. “Trust” and “excellence” go hand in hand, as the Foundation grants around 700 fellowships and 100 research awards to exceptionally highly-qualified scientists and scholars each year. There are no quotas for countries, gender, or fields of research – rather, the selection of individuals from an international pool of superb candidates is based solely on their academic achievements – meritocracy prevails. A Humboldt Research Fellowship enables researchers to spend research stays for a duration of 6 to 24 months in Germany. During this period, they carry out research projects in cooperation with academic hosts at research institutions of their own choice in Germany. There are two lines of funding in this programme, one for postdoctoral fellows and one for experienced
researchers who can apply up to 12 years after their PhD. Candidates choose their own research projects and – as just mentioned - their host in Germany and prepare their own research plan without any stipulations by the Foundation. Applications are possible at any time. The Humboldt Research Fellowship was the Foundation’s first programme and remains its largest. Over the years, the portfolio has expanded, and the Foundation now offers support for individual researchers in a variety of programmes. Research Awards are conferred to researchers at the height of their academic careers, the so-called Feodor Lynen Fellowships are granted to German researchers to collaborate with Humboldtians abroad. More information and details on these and other programmes are available on our website, you may wish to seek this out.

Turning to Australia, I can report that there are currently more than 470 Humboldtians living and working in this region of the world. Some are in the audience today, and I wish to thank you for welcoming me to Melbourne. The first Humboldt Research Fellow from Australia came to Germany in 1955. Since then, the Selection Committees of the Humboldt Foundation have granted more than 480 fellowships to researchers from this region. 70 scientists and scholars from Australia have received the Humboldt Research Award for outstanding achievements in their field. Approximately one hundred German Feodor Lynen Fellows have chosen host institutions in Australia as a career step in the past. Roughly 150 fellows and awardees from Australia have returned to Germany for renewed research stays sponsored by the Humboldt Foundation.

Behind these numbers, many personal success stories of scientists and scholars forge the Foundation’s international reputation – in Australia and around the globe. Its principles are guided by the simple conviction that, whilst science is like a mosaic comprising a multitude of individual contributions, breakthroughs are nearly always due to the sole efforts of individuals. This is what individual sponsorship is based on. In our opinion, giving support to highly gifted and dedicated individuals – and trusting them and their capabilities – constitutes the best conceivable investment, and the Humboldt Foundation has practised this ever since its inception. We thus seek to spark the enthusiasm of the world’s research elite for cooperation with Germany and Europe. One hallmark of all Humboldt activities is that the sponsorship is followed by a sustainable, lifelong association with the Foundation, simply adhering to the modified Oxbridge motto: “Once a Humboldtian, always a Humboldtian”. After their initial research stays, our alumni are enabled to stay in contact with their German research colleagues by a wide range of alumni sponsorship instruments, for example during renewed shorter research stays sponsored by the Foundation. In our Humboldt family – if I may use this term – we try to develop and foster that sense of belonging to a community stemming from the fellows’ research stays in Germany. The Foundation, or more precisely, the Humboldtians, are
tireless campaigners for empathy and international understanding, and through their actions, the
Humboldt Foundation practises international solidarity based on scientific collaboration.

I strongly believe that one has to provide an intellectual environment that nourishes unconventional
thinking of scientists and scholars, allowing them, as teachers, to convey an understanding of basic
research as a cultural achievement to their students; their voices ought to be heard in public
discussions about the usefulness or “returns of benefit” of research for society, for example, and if
these voices are too quiet, they ought to be brought to the public’s attention; I believe we have an
obligation to create an environment where individuals are met with empathy and understanding if
they respond as Michael Faraday did once when asked by the Prime Minister of his Royal Majesty to
comment on the usefulness of his expensive, tax-funded research on the riddle of electricity. Faraday
simply replied: “Lord Gladstone, one day you will tax it.” I dare say Faraday had and still has a point!
Only very few of the many aspects of our daily lives that we take for granted today would have been
possible without fundamental research. Indeed, one of the roles of the university and research
sponsorship in our society remains to prepare the ground, to tend the soil so that the seeds of
knowledge – even if they may appear useless or insignificant at first – will grow.

We should recall that publicly financed fundamental research is neither a luxury nor a subsidy, but a
cultural achievement and, as such, marks the starting point of every single value-added chain.
Precisely – GPS devices would not exist without Einstein’s work on the exotic theory of special
relativity! In fact, fundamental research is essential if we are to secure the future because none of
the burning issues of the day can be solved without it.

The keyword here, again, is “trust”. Since the subject of research is often difficult to convey to others
and its primary goal is often initially just to understand the subject better – all of which takes time
and money – research is increasingly encountering pressure to justify itself. This is especially true for
“fundamental” research. In a recent Editorial to the journal *Angewandte Chemie*, I expressed my
concerns with current trends in the funding of research, concerns which I wish to share with you
today. An attitude seems to have gained momentum that is so overwhelmingly in favour of project
 funding that opposing voices have started to campaign publicly for individual sponsorship. “Fund
people, not projects” was the title of a recent article in *Nature*, for instance (J. P. A. Ionannidis,
Nature, 2011, 477, 579). Of course, it would be artificial and counterproductive to try and construct
an opposition on this issue because there are themes that are so complex that they can only be
addressed by research associations, for example. But here, too, I have a strong position, and I believe
that the advocates of programme and project funding have to accept that, without exception, crucial
breakthroughs are always the result of a random combination of creativity, intelligence, curiosity, persistence and serendipity, and that what lies behind major discoveries or inventions is usually the passion of individual people. Just like people in love, they are barely able to provide a convincing explanation for their fervour for science; they may feel intensely passionate about their work but also pace the corridors of their institutes with downcast eyes, sit at their café tables with a peculiar smile on their lips, leap out of bed in the middle of the night to note down an idea, send a message or quite simply stare at the star-lit sky, reliving the magical sound of a Mozart Sonata: dreaming, musing and perhaps seeming to follow a path as yet unmarked by signposts pointing the way to the pinnacle of knowledge. Precisely because fundamental research is not intrinsically predictable it is essential to reward those who have the courage to conduct genuinely high-risk research. If we do not do so, in the long run, it will be almost impossible to avoid ending up with mainstream research that lacks imagination and vision. And the danger of locating the majority of our research topics and approaches in familiar territory could become quite serious.

If one argues for generously funded, excellent fundamental research, one implicitly campaigns on behalf of the individual researcher. Let’s make no mistake about it: without Goethe, the definitive “Faust”, the “Elective Affinities” and all that incomparably beautiful poetry simply would not exist; without Mozart, we would not have “Così fan tutte”; without Watson und Crick, the DNA structure would have been elucidated some years later, but their Nature article, that has become the icon of the life sciences would not exist. Of course, all groundbreaking changes would have happened at some stage; but even so, it would always have been individuals who came up with the vital idea and battled on boldly, behaving – possibly quite unconsciously – according to Lao Tse’s maxim that “if you want to reach the source you have to swim against the current.” And if scientists are going to achieve this goal they should not be restricted by too narrowly defined time and target setting – rather, they need funding continuity, space and trust. This is the demand at the heart of a manifesto signed by 13,000 researchers and submitted to the European Council of Ministers and the European Parliament entitled “Trust Researchers”.

In Germany, we have set out along this path: three years ago, we established the Alexander von Humboldt Professorship. Since then, more than 25 Humboldt Professors from leading international institutions have accepted appointments at German universities. They may use the funding they receive by the Humboldt Foundation to carry out research under unique conditions with maximum freedom. The Humboldt Professorship is currently the most highly endowed research award in Germany – recipients receive up to 5 million euros for a period of 5 years and a life appointment at a University. However, generous funding is required much earlier on. Junior researchers must be
empowered to act independently at an early stage in their careers; they should not be the servants of established colleagues but be able to operate as researchers and teachers in their own right. Their decision to measure themselves against their peers in high-risk fields needs our moral and material support. And here, too, the sponsorship philosophy of the Alexander von Humboldt Foundation is to some extent exemplary because the talents who are prepared to venture off the beaten track in order to try out their unorthodox ideas are the very ones we have been sponsoring for the last 60 years – with a considerable degree of success.

We should never forget that “trust” in the achievements of research and the provision of a creative environment constitute the most important assets in science – and without science we are unlikely to be able to construct a future that is worth living. Max Planck’s remark that “insight must precede application” is still as pertinent as a guideline for action as it has served to this very day as a precept of Germany’s Max Planck Gesellschaft. And the words written by Vannevar Bush, scientific advisor to President Franklin D. Roosevelt, in his draft of the Harvard Commencement Speech 1945 should be the creed of all research funding organisations. Let me quote from this remarkable speech: “Scientific progress on a broad front results from the free interplay of free intellectuals, working on subjects of their own choice, in the manner dictated by their curiosity for exploration of the unknown.” Research institutions that act on this principle, such as the Max Planck Gesellschaft, do not need to be persuaded how true and meaningful this recommendation is.

Ladies and gentlemen, Alexander von Humboldt believed that scientists were not only under an obligation to publish their findings but to popularise them and to communicate science to a broader audience. “The knowledge that results from the free action of thought is at once the delight and the indestructible prerogative of man; and in forming part of the wealth of mankind, it not infrequently serves as a substitute for the natural resources, which are but sparingly scattered over the earth,” wrote Alexander von Humboldt in his life’s work, “Kosmos”, in 1845. He went on to say that “Those nations which take no active part in the general industrial development [...], and among whom this scientific activity is not appreciated by all classes of society, these nations will infallibly see their prosperity diminish in proportion as neighbouring countries become strengthened and invigorated under the genial influence of arts and sciences.” One can only admire the far-sightedness of Humboldt’s thinking in the mid 19th century. What Humboldt then foresaw has become omnipresent reality today. At the beginning of the 21st century, science and politics are shaped first and foremost by a global competition for precisely that knowledge, the crucial resource for growth, innovation and prosperity. Contemporary, knowledge-based societies, which are still largely organised along national lines, are exposed to unrelenting international pressure to compete. Science itself, by its very nature,
is truly international; it ignores boundaries of whatever kind because new findings are never confined to a particular place or nation and can be generated and acquired anywhere provided a proper environment exists.

I believe that “excellence” and “trust” are cornerstones that ought to shape our response to the challenges of our age. Promoting excellence and building trust by investing in individuals in all fields of research everywhere in the world and by supporting their personal quest for knowledge as well as their interaction and exchange internationally – this is what the Alexander von Humboldt Foundation seeks to achieve. It won’t come as a surprise that such a funding philosophy is widely appreciated and supported by individual researchers in countries all over the world wishing to spend more time on their research and less time on reporting duties and grant applications. At the same time, such a philosophy is often met with scepticism by those who stress the importance of top-down planning, prioritizing and monitoring of “returns on investment” in research. They often wonder: Why would the German government support an organization that adheres to such a “libertine” sponsorship philosophy? Questions like these are legitimate, from a certain point of view, and I hope that my comments so far have already provided answers that allow us to enter a debate. By investing in individual researchers, we invest in the future of science and scholarship and the future of our societies; by investing in international exchange, we invest in trust. Trust develops when scientists and scholars from different countries collaborate, when they receive the opportunity to learn or to master foreign languages, to absorb foreign cultures and get familiar with the history of a host country; trust develops into an asset in the further course of cooperation, enabling great achievements in science and scholarship and, at the same time, bringing individuals together respectfully and peacefully. Let me give a few examples.

We currently count 49 Nobel Laureates among our Humboldtians. Most of them were honoured with Humboldt Research Awards years ahead of the Stockholm decisions. And for many among them, their research stays in Germany were most fruitful periods, where they were able to do parts of those works leading to the Nobel Prize. All three recipients of last year’s Nobel Prize in Medicine and Physiology are Humboldtians, for example. Bruce Beutler from the United States received the Humboldt Research Award in 1993 and conducted research at the University of Regensburg in 1994. Jules Hoffman, born in Luxemburg, won the Humboldt Research Award in 1983 and conducted research at the University of Marburg in 1984. And the late Ralph Steinman, born in Canada, who passed away before hearing the Stockholm decision, received the Max Planck Research Award, the joint international research award of the Alexander von Humboldt Foundation and the Max Planck Society, in 1999. These leading scientists collaborated with partners in Germany, building personal
relationships at first, then expanding these relationships to include students and postdocs in their world-class research, allowing the Humboldt sponsorship to shape not only their own lives, but those of other individuals as well.

Nobel Laureates are highly visible, and therefore, of course, we like to speak about them. But at the same time, every year, many hundreds of Humboldtians attain individual career goals. They are appointed professors, deans, university presidents, vice-chancellors. They initiate exchange programmes, establish businesses. Some are appointed ambassadors, high-court judges, academy presidents or state secretaries. The past Hungarian State President is a Humboldtian, for instance, the current U.S. Secretary of Energy and U.S. Undersecretary of State, past Science Ministers in Warsaw or Beijing. All of these individuals shape the structures of their societies. And their experience as Humboldtians in Germany, their exposure to a foreign culture and German society, shapes their personal lives and reasoning.

Here in Australia, the roughly 470 Humboldtians based at research institutions around the country bear evidence of the strength of the Australian-German partnership. More than thirty years ago, a group of active Humboldtians founded the Australian Association of von Humboldt Fellows (AAvHF). The Association – like many other Humboldt Alumni Organizations around the world – encourages regional and international academic and cultural exchange between Humboldt alumni and their colleagues. The Humboldt Foundation has no branch offices abroad. We rely on our alumni to keep the community of Humboldtians alive and on partners like the German diplomatic missions and German Academic Exchange Service to support our work. Therefore, I am particularly grateful that so many alumni and partners are here tonight. If you are not a Humboldtian yet, do not hesitate to contact them and ask them about their experience. Let me mention that, in 2010, we appointed Professor Kay Double at the University of New South Wales as Humboldt Ambassador Scientist for Australia, an honorary position. The role of Ambassador Scientists is to advise the Humboldt Foundation on local programme promotion and networking. Professor Double stands in close touch with the Australian Association of von Humboldt Fellows, the DAAD Information Centre in Sydney and the German Embassy in Canberra. She cannot be here today, but we are pleased to have her support.

I was also very pleased to hear of the founding of an “Australian-German Science Circle” initiated by both the German Embassy in Canberra and the Australian Embassy in Berlin this past fall. Dr. Katrin Amian, Head of the Division North America, Australia and New Zealand, opened the series in Canberra with a talk on the Humboldt Foundation; Australian Chief Scientist Professor Ian Chubb
spoke about the Australian government’s strategic plan for research in Berlin. To my delight, the “Science Circle” has reconvened tonight here in Melbourne; I am very pleased to be a part of it. The founding of such a forum for a bi-national reflection on science and scholarship underlines the common goal of both countries to support and strengthen research cooperation and to bring outstanding scientists, scholars and science management experts together for an exchange of thoughts and expertise. Australian Ambassador to Germany, Mr. Peter Tesh, has taken the initiative to declare 2013 a “German-Australian year of science”. 2013 will also mark the 200th birthday of Ludwig Leichardt, the Prussian explorer and contemporary of Alexander von Humboldt, who is famous for his exploration of northern and central Australia. In this context, I can announce that the Alexander von Humboldt Foundation is planning to hold a larger meeting for the Humboldt community in Australia in 2013. We hold two such meetings annually, world-wide, choosing the host country on strategic grounds. We know that there are many excellent researchers in Australia who are not Humboldtians yet, we are interested in learning more about recent developments in science policy and research funding, and we wish to reconnect with our alumni, listening to the stories they have to tell and the advice they have to give. In a nutshell: We hope to strengthen existing ties and to expand the Humboldt network, seeking to promote “excellence” and to build “trust” within the German-Australian partnership for many years to come.

Thank you for your attention!