

FACULTY OF  
SCIENCE



THE UNIVERSITY OF  
SYDNEY

**ANNUAL REPORT 2010**  
**SCIENCE FOUNDATION FOR PHYSICS**  
WITHIN THE UNIVERSITY OF SYDNEY

Dr William D. Phillips  
pouring liquid nitrogen



The Science Foundation for Physics, established in 1954 by Emeritus Professor Harry Messel AC CBE, was the first Foundation established within the University of Sydney and the first of its kind within the British Commonwealth.

The Foundation was established to support the School of Physics as a philanthropic association of individuals and private organisations dedicated to the pursuit of excellence in science education, research, training and communication. Today the Foundation still carries out this important role.

#### AIMS OF FOUNDATION:

- To support the School of Physics and to generate philanthropy, promote careers and broaden knowledge and understanding of science (in particular physics) in the wider community.

#### OBJECTIVES OF THE FOUNDATION:

- To increase the resources of the University (by fundraising or by otherwise securing gifts and grants or by securing the provision of services or other nonfinancial contributions) to assist the Senate and the Vice-Chancellor in the promotion of the field of physics, through the School of Physics, and

- To co-operate with the School of Physics, the Faculty of Science and the University in promoting the significance of science and developing an understanding of its importance both within Australia and internationally.

#### FOUNDATION ACTIVITIES IN SUPPORT OF ITS OBJECTIVES:

- Raising funds from fees, donations, bequests and sponsorships.
- Building a strong financial position to ensure the Foundation can continue to meet its objectives in the long term.
- Providing additional funding to support the work of the School of Physics, e.g. the purchase of equipment, and the underwriting of new initiatives.
- Promoting seminars, courses and workshops in the field of physics.
- Inspiring senior secondary school students through the Professor Harry Messel International Science School (ISS) to continue studies in science, and physics in particular, and take up science careers.
- Any other initiatives and activities as the Foundation determines appropriate from time to time.

Front cover: Close up of a nanospectrometer which builds materials one atomic layer at a time; Albert Wong and Harry Messel

Images throughout this report are from two Science Foundation for Physics Events run in 2010:

Honouring Excellence: A tribute to Emeritus Professor Harry Messel AC CBE held in May 2010

Time, Einstein and the Coolest Stuff in the Universe, a Sydney Ideas talk presented by Dr William Phillips, Nobel Laureate, Physics (1997) held in August 2010

Photo credits: Daniel Linnett Photography, Chris Bennet (nanospectrometer image), Dr Phil Dooley (School of Physics image)

## PRESIDENT'S REPORT

*Mr Trevor Danos  
pays tribute to  
Emeritus Professor  
Harry Messel at  
Honouring Excellence*



It is my pleasure to present the 2010 Annual Report of the Science Foundation for Physics.

The key role for the Foundation, indeed the *raison d'être* for any University of Sydney foundation, is fundraising. The circumstances of the Foundation have changed considerably from its establishment in 1954 when it was the first foundation of its kind and the world-at-large was mesmerised by atomic physics (it is worth remembering that the Foundation was originally named the Nuclear Research Foundation). In our present times, made more challenging by the Global Financial Crisis, there is far less interest and willingness on the part of industry and commerce to give financial support to the non-medical sciences. A number of major and well planned fundraising initiatives were pursued in 2010 – including high profile, big-end-of-town lunches with keynote speakers from the School of Physics (School) speaking on the Square Kilometre Array (SKA) telescope and on nanoscience – but without significant success (as measured purely in dollars).

With these realities in mind, the Foundation pushed for, and readily agreed to participate in, an external review of the Foundation and its operations. The review (sponsored and paid for by the School) was conducted mid year by Dr Thomas Barlow, a leading research strategist and a former Science Adviser to the Australian Minister for Education,

Science and Training. At the time of writing this report, the Foundation is in the process of reviewing, taking stock from and selectively implementing the Barlow recommendations. Most significantly, this will see:

- a much closer alignment between the School's and the Foundation's committees, with relevant committees being reconstituted, merged and given new focus;
- clear and transparent arrangements being put in place to ensure that the biennial Professor Harry Messel International Science School (ISS) is fully funded in perpetuity;
- a shift away from the Foundation's fundraising being principally focused on the ISS to the broader needs of the School, including scholarships and fundraising for the new building that will replace the Annex at the rear of the School and that will house the Australian Institute for Nanoscience;
- the Foundation (with input from the School and the Faculty of Science (Faculty)) having access to professional fundraising advice and support;
- an increased fundraising focus on alumni of the School, especially those who were privileged to have been students during Harry Messel's time as Head of School; and
- the Foundation's stand alone "back office" being dissolved and with relevant activities/services to be supplied and supported by the School and the Faculty.

In charting its future direction, the Council will ensure that the Foundation achieves the right balance between honouring the past including Harry Messel's great vision and his steadfast commitment to excellence and fulfilling the Foundation's commitment to provide the best and most effective support for the School. This will not result in any material changes to the way in which the ISS is run, to the annual funding of School prizes and scholarships (over \$30,000 pa), to the funding of annual discretionary expenditure by the Head of School (\$100,000 pa) or to the Foundation's sponsorship of the Julius Sumner Miller Fellow, Dr Karl Kruszelnicki AM.

The Foundation will also continue identifying and incubating new outreach activities and activities that benefit the School and its stakeholders. Past activities include the development of a teaching module on Leadership and Ethics and the biennial Science Teachers Workshops, now extended beyond physics and run by the Faculty. Pipeline activities include the development of a module on communications and presentation skills and increasing the opportunities for work-experience in industry and business.

The Foundation has maintained a high profile in 2010 and its views are regularly and widely sought. Activities include participating in the NSW Premier's Business-University-Government forum, developing a working relationship with the Weizmann Institute (Australian branch), meeting with senior officers from the Department of Innovation, Industry, Science and Research on the report *Inspiring Australia – A national strategy for engaging with the sciences*, and co-hosting the public lecture at the University of Sydney by physics Nobel Laureate Dr William Phillips.

2010 has been a year of many exciting changes to which the Foundation has contributed. The Council Room has been refurbished and now has state-of-the-art teleconferencing facilities. The School's foyer houses a permanent display of rare and valuable physics objects.

Planning is well advanced for the 36th ISS, themed *Light & Matter*. Students will again be coming from across Australia and nine other countries to hear world-class speakers. I am pleased to report that Dr Chris Stewart is returning to project manage the ISS2011.

2010 saw the retirement from the Council of two long serving and much admired and respected members: Emeritus Professor Richard (Dick) Collins and Dr Peter Jones AM. Dick is a former Head of School. Peter is a former President. Between them, they have given over 40 years of loyal and dedicated service and wise counsel to the Foundation. They remain Honorary Governors and great friends of the Foundation. In 2010 we welcomed to the Council Dr Susan



Dr William Phillips demonstrates the spinning of an 'atom'

Pond AM. Susan is a distinguished medical scientist and company executive, as well as being an ISS alumna.

I am indebted, once again, to the sterling work done by Jim O'Connor as Chair of the Finance Committee. I also want to thank Professor Clive Baldock, the new Head of School, with whom I enjoy an excellent working relationship and who has always found time (often on early morning walks at the beach) to engage constructively with the Foundation in a very busy and demanding year.

**Trevor Danos**  
President  
Science Foundation for Physics

## DIRECTOR'S REPORT

*Professor Clive Baldock thanks Dr William D. Phillips for his presentation Time, Einstein and the Coolest Stuff in the Universe*



It is with pleasure that I write my first report as Director of the Science Foundation for Physics.

When Professor Harry Messel set up the Science Foundation for Physics in 1954, then known as the Nuclear Research Foundation, the aim was to further support for the School of Physics. It was with continued support from the Foundation that the School of Physics continued to be successful in 2010 with many successes, a number of which I highlight below.

In March Professor Elaine Sadler, ARC Professorial Fellow in the School of Physics, was elected to the Australian Academy of Science in recognition of her research in high energy astrophysics and galaxy evolution. The Fellowship of the Academy is made up of over 400 of Australia's top scientists, distinguished in the physical and biological sciences and their applications, who are considered to have made an exceptional contribution to knowledge in their field and have significantly advanced the world's scientific knowledge.

In June the Federal Government announced the success of the School of Physics application, through the University of Sydney, in securing funding from the third round of the Federal Government's Education Investment Fund (EIF) towards a new additional building for the School of Physics.

The new building will replace the existing School of Physics Annexe. The University of Sydney will receive \$40million to establish the Australian Institute for Nanoscience (AIN), which will be housed in the new Physics building. The AIN will develop nano-devices that will have impacts in many fields including physics, materials science, photonics and medicine. The Institute will build research capacity and expand the scope for collaboration with high-tech Australian businesses, leading to direct economic and social benefits. The University of Sydney will contribute an additional \$70million to the total cost of the 10,000 square metre building.

In July the School of Physics was very successful in obtaining funding from 2011 for Australian Research Council (ARC) Centres of Excellence. Of the 13 Centres of Excellence funded nationally by the ARC, Centres of Excellence in astronomy and photonics will be housed in the School along with three nodes of other Centres of Excellence, in quantum technology, quantum computing and high energy and particle physics, which are administratively housed in other universities.

In August, with support from the Foundation, the School organised a public lecture by quantum physicist, Dr William Phillips, 1997 Nobel Laureate for Physics, as part of Sydney

School of Physics  
after a storm



Ideas in the Seymour Centre. All the feedback received from the 500 attendees thought it to be a fantastic success and thoroughly enjoyable evening. The School hopes to be able to put on future events with other Nobel Laureates.

In September Professor Bryan Gaensler won the Physics, Earth Sciences, Chemistry and Astronomy Category of the 2010 NSW Scientist of the Year Awards. The NSW Scientist of the Year awards, presented at Government House by Her Excellency Professor Marie Bashir AC CVO, Governor of NSW, were established in 2008 to recognise and reward the state's leading researchers for cutting edge work that generates economic, health, environmental or technological benefits for NSW.

We look forward with anticipation to another Professor Harry Messel International Science School (ISS) in 2011, themed *Light & Matter*. No doubt it will be another successful ISS with much to offer the Year 11 and 12 students who attend from all over Australia and the various participating countries.

2010 was a time of review for the School of Physics and the Science Foundation for Physics. Consultant to the University sector, Dr Thomas Barlow undertook an external review of the activities of the School of Physics and Science Foundation for Physics. His report provided insight and

facilitated much discussion regarding the future direction of the School and Foundation.

I would like to thank my predecessor, Professor Anne Green for the support and encouragement she gave me as I undertook my new role in 2010. I would also like to thank the School of Physics staff who worked on the various Science Foundation for Physics events and activities throughout the year. I would further like to thank the Science Foundation for Physics President, Deputy President and Council for their continual support of the School of Physics.

**Professor Clive Baldock**

Director, Science Foundation for Physics  
Head, School of Physics

# SCIENCE FOUNDATION FOR PHYSICS

## MEMBERS

### PAST PRESIDENTS (INITIAL YEAR OF PRESIDENCY SHOWN)

Dr Richard GC Parry-Okeden (1954)  
 Sir James N Kirby CBE (1957)  
 Sir Frank Packer KBE (1960)  
 Sir Noel Foley CBE (1963)  
 Sir Walter Leonard DFC (1966)  
 Sir Robert Norman (1969)  
 Mr James A Macpherson (1972)  
 Sir Walter Leonard DFC (1973)  
 Mr J Keith Campbell CBE (1975)  
 Mr Herman D Huyer AO OON (1978)  
 Mr Raymond J Kirby AO (1982)  
 Mr John R Slade (1986)  
 Mr Peter Douglas (1989)  
 Dr Peter Jones (1993)  
 Mr Paul Slade (1996)  
 Mr Graham Hall (1999)  
 Mr Pat Donovan AM RFD ED (2002)  
 Mrs Louise Davis (2005)

### PAST DIRECTORS (INITIAL YEAR OF DIRECTORSHIP SHOWN)

Emeritus Professor  
 Harry Messel AC CBE (1954)  
 Emeritus Professor  
 Max Brennan AO (1987)  
 Professor Lawrence Cram (1991)  
 Emeritus Professor  
 Richard Collins (1997)  
 Professor Bernard Pailthorpe (2002)  
 Associate Professor  
 Robert Hewitt (2003)  
 Professor Anne Green (2006)

### FOUNDATION COUNCIL 2010

#### OFFICE BEARERS OF THE FOUNDATION

Mr Trevor Danos, President  
 Mr John Paterson, Deputy President  
 Mrs Louise Davis, Immediate Past President

### UNIVERSITY OFFICER

Professor Mitchell Guss, Acting Dean of Science (January –July 2010)  
 Professor Trevor Hambley, Dean of Science (July 2010 – present)

### COUNCIL MEMBERS

Mr Ron Enestrom  
 Associate Professor Robert Hewitt  
 Mr John Hooke CBE  
 Emeritus Professor  
 Dame Leonie Kramer AC DBE  
 Emeritus Professor  
 Harry Messel AC CBE  
 Mr Jim O'Connor  
 Dr Susan Pond AM  
 Mr Paul Slade  
 Mr Albert Wong

### UNIVERSITY EX OFFICIO COUNCIL MEMBER

Ms Shauna Jarrett,  
 Office of General Counsel

### COUNCIL MEMBERS WHO RETIRED IN 2010

Emeritus Professor Richard Collins  
 Dr Peter Jones AM

### FOUNDATION MEMBERS

#### FOUNDER AND HONORARY GOVERNOR

Emeritus Professor  
 Harry Messel AC CBE

#### LIFE GOVERNOR

Mr Albert Wong

#### HONORARY GOVERNORS

Mr Tony Aveling  
 Mr John Boettcher OAM  
 Emeritus Professor Max Brennan AO  
 Emeritus Professor Richard Collins  
 Professor Lawrence Cram  
 Associate Professor Robert Hewitt  
 Mr John Hooke CBE

Dr Peter Jones AM

Emeritus Professor  
 Dame Leonie Kramer AC DBE  
 Mr Raymond Kirby AO  
 Mr John Slade

### INDIVIDUAL MEMBERS

Mr Trevor Danos  
 Mrs Louise Davis, representing IBM Australia Limited  
 Mr Ron Enestrom  
 Mr John Hooke CBE  
 Mr Jim O'Connor, representing Westpac Banking Corporation  
 Dr Susan Pond AM  
 Mr John Paterson  
 Mr Paul Slade, representing The Nell & Hermon Slade Trust

### CORPORATE MEMBERS

IBM Australia Limited  
 The James N. Kirby Foundation  
 NSW Business Chamber  
 The Nell and Hermon Slade Trust  
 Westpac Banking Corporation  
 AGL Energy Limited  
 Boral Limited

### FOUNDATION STAFF

Professor Clive Baldock, Director and Head, School of Physics  
 Mr Adam Selinger, Executive Officer (September 2008 - August 2010)  
 Ms Alison Muir Manager, Acting Manager, Science Foundation for Physics (August 2010 - present)  
 Dr Diana Londish, Education and Administration Officer (maternity leave contract)  
 Mrs Alex Green, Education and Administration Officer (on maternity leave)

# FOUNDATION GOVERNANCE STATEMENT



*Mr John Paterson*



*Plasma Ball*

The Science Foundation for Physics within the University of Sydney recognises the importance and benefit of aligning its activities with the University's new governance principles and provides the following report.

## **PRINCIPLE 1: LAY SOLID FOUNDATIONS FOR MANAGEMENT AND OVERSIGHT**

### **NATURE OF THE ENTITY**

The Science Foundation for Physics is a part of the University of Sydney (ABN 15211513464) and not separately incorporated under a State or Commonwealth Act. The Foundation is required to gain prior approval for its fundraising activities from the appropriate University Officer. The Foundation's activities are not-for-profit and covered by the Deductible Gift Recipient (DGR) status of the University of Sydney. The University is exempted from the requirement to hold an Authority to Fundraise and obligations upon holders of such an authority but is still required to comply with the balance of provisions of the Charitable Fundraising Act.

### **ROLE OF COUNCIL AND MANAGEMENT**

The Foundation operates under the authority of the Senate of the University of Sydney, as approved on 6 November 2006 and has no powers of delegation. The Foundation conducts its affairs pursuant to the Foundation Rules and

the relevant policies of the University. The Foundation's fundraising activities are approved by the University Officer. The Foundation is reviewed every three years.

The School of Physics engaged Dr Thomas Barlow of Barlow Advisory to undertake an external review of the Foundation in 2010.

## **PRINCIPLE 2: STRUCTURE OF THE COUNCIL TO ADD VALUE**

Council members were elected and at the Foundation's AGM on 25 March 2010. All terms for Members are annual. In 2009 a two-year term was introduced for the President and Deputy President. The full Council can co-opt members to fill vacancies outside of the process of election at the AGM.

There was no a performance evaluation of the Council undertaken in 2010. Dr Peter Jones AM and Emeritus Professor Richard (Dick) Collins retired from the Council at the AGM.

The Council of the Foundation in 2010 consisted of the following members:

(unless otherwise noted all terms are annual)

**President**, Mr Trevor Danos

Term of Appointment 26 March 2008 until 2011 AGM

**Deputy President**, Mr John Paterson

Term of Appointment: 26 March 2009 until 2011 AGM

**Immediate Past President**, Mrs Louise Davis, representing IBM Australia Ltd

**Treasurer**, Mr Jim O'Connor, representing Westpac Banking Corporation  
Mr O'Connor is Chair of the Finance Committee.

**UNIVERSITY OFFICER (FOUNDATION):**

Professor Mitchell Guss  
(27 November, 2009 to 11 July 2010)

Professor Trevor Hambley (appointed 12 July 2010)

**Director**, Professor Clive Baldock,  
Head of School of Physics

**Office of General Counsel (OGC)**, Ms Shauna Jarrett  
Ex officio representing the Deputy Vice-Chancellor and Provost

Mr Ron Enestrom

Associate Professor Robert Hewitt, Honorary Governor

Mr John Hooke CBE, Honorary Governor

Emeritus Professor Dame Leonie Kramer AC DBE,  
Honorary Governor

Emeritus Professor Harry Messel AC CBE,  
Founder and Honorary Governor

Dr Susan Pond AM

Mr Paul Slade, representing The Nell & Hermon Slade Trust

Mr Albert Wong, Life Governor

**PRINCIPLE 3: PROMOTE ETHICAL AND RESPONSIBLE DECISION-MAKING**

Council members have been provided with the University of Sydney Foundation Governance Guide, Foundation Rules, Code of Conduct and Conflicts of Interest Policy and the Occupational Health and Safety Policy. The latter two policies are also available on the University's public website as are other relevant University policies regarding harassment, grievance procedures and related policies.

**PRINCIPLE 4: SAFEGUARD INTEGRITY IN FINANCIAL REPORTING**

The annual accounts of the Foundation are prepared by the financial staff of the University, signed off by Finance Director, Faculties of Science, Engineering & Information Technology and are included in this Annual Report to the Senate. The Foundation is part of the University and therefore does not have its own audit sub-committee, The University is audited by the Audit Office of NSW.

The Foundation undertook the following fundraising appeals during 2010:

Sydney Development Fund – combined Science Foundation for Physics 2010

**Tax and Spring Campaigns raised \$19,175**

**The Messel Endowment - \$306,000**

In conducting those appeals the Foundation did not pay commissions to any persons. Gross income received and application and disposition of that income were recorded in the minutes of the Foundation.

**PRINCIPLE 5: MAKE TIMELY AND BALANCED DISCLOSURE**

The Foundation complied with the reporting and disclosure requirements of the Senate. These include an annual budget and this Annual Report.

Members and Council have been made aware of the processes for disclosure pursuant to the Code of Conduct, Conflicts of Interest policy, which include protected disclosure to the ICAC, to the Ombudsman or the Auditor General.

**PRINCIPLE 6: RESPECT THE RIGHTS OF SHAREHOLDERS, MEMBERS, STAFF, VOLUNTEERS, CLIENTS, & OTHER STAKEHOLDERS**

The Foundation Council and membership consists of members of the community, industry bodies and the University whose input is invited via the Annual General Meeting and Council meetings of the Foundation. The following events were held during the year to involve stakeholders: Honouring Excellence - A Tribute to Emeritus Professor Harry Messel AC CBE and the public lecture by Nobel Laureate (Physics) Dr William Phillips.

Under the Charitable Fundraising Act, the University may be questioned about any appeal on details of the purpose of the appeal such as the appeal target, objectives, distribution of proceeds, etc.

During the year the Foundation published information on its website, online monthly Alumni Update and printed biannual Alumni News publications, and outlines those activities in this Annual Report.

**PRINCIPLE 7: RECOGNISE AND MANAGE RISK**

The Foundation recognises its activities within University premises or other premises require risks such as health and safety, environmental protection, privacy, trade practices, and compliance with the Charitable Fundraising Act to be considered and managed. The Foundation has managed

these risks during the year by adhering to University policies concerning events, publications and external relations activities.

### PRINCIPLE 8: REMUNERATE FAIRLY AND RESPONSIBLY

No member of a Council is entitled to receive any remuneration for acting in that capacity except reasonable remuneration on a basis, which has first been approved in writing by the University Officer (Foundations).

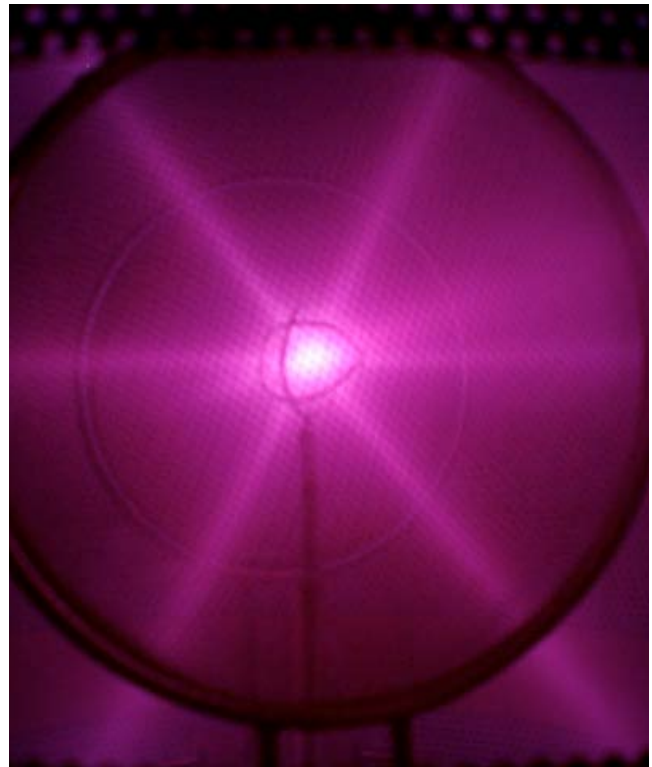
Members of the Foundation Council may be reimbursed for reasonable expenses after written approval of the University Officer (Foundations). Any such instances are recorded in the minutes of the Council.

1 See s5 Charitable Fundraising Act 1991 (NSW)

2 Reg 9(6) Charitable Fundraising Regulation 2008

3 See s22(2)(b) Charitable Fundraising Act 1991 (NSW)

FOUNDATION COUNCIL MEMBER	COUNCIL MEETINGS ELIGIBLE TO ATTEND	COUNCIL MEETINGS ATTENDED
Mr Trevor Danos	Four	Four
Mr John Paterson	Four	Four
Mrs Louise Davis	Four	Three
Mr Jim O'Connor	Four	Three
Prof. Clive Baldock	Four	Two
Prof. Mitchell Guss (University Officer – til July 2010)	Two	Two
Prof. Trevor Hambley (University Officer – from July 2010)	Two	Two
Ms Shauna Jarrett (OGC)	Four	Four
Mr Ron Enestrom	Four	One
A/Prof. Robert Hewitt	Four	Four
Mr John Hooke	Four	Three
Dame Leonie Kramer	Four	One
Em. Prof. Harry Messel	Four	Four
Dr Susan Pond	Three	Two
Mr Paul Slade	Four	Four
Mr Albert Wong	Four	Four



A 'star' in a lab i.e. a fusion plasma using inertial electrostatic confinement fusion

FINANCE COMMITTEE MEMBER	FINANCE COMMITTEE MEETINGS ELIGIBLE TO ATTEND	FINANCE COMMITTEE MEETINGS ATTENDED
Mr Trevor Danos	Four	Three
Mr John Paterson	Four	Four
Mrs Louise Davis	Four	Nil
Mr Jim O'Connor	Four	Four
Prof. Clive Baldock	Four	Four
Prof. Mitchell Guss (University Officer – til July 2010)	Two	One
Prof. Trevor Hambley (University Officer – from July 2010)	Two	Two
A/Prof. Robert Hewitt	Four	Three

## SUPPORTING THE SCHOOL OF PHYSICS

Trevor Danos & Harry Messel with a donation of \$100,000 from a Physics Alumnus



The Science Foundation for Physics supports the School of Physics in several ways. These include promoting its achievements, funding its alumni publications and communications, supporting its events and through annual scholarships, prizes and awards valued at over \$30,000 annually. The Foundation funds post-graduation and prize-giving ceremony receptions for Physics students.

### ALUMNI ENGAGEMENT

Alumni and community engagement is a priority within the University of Sydney. In 2004 the Foundation announced that it would support the alumni activities of the School of Physics.

Over the past six years the alumni and community engagement activities of the School have benefitted from the professional promotion and management of events, effective design of, and interesting content in, publications such as *Alumni News* and by the introduction of a monthly e-newsletter, *Alumni Update*, which is emailed to around 1,600 alumni and friends.

The Foundation's support has seen an increase in the number of alumni now in touch with the School and the Foundation from 1,000 Physics and ISS alumni in 2004 to a current listing of 4,583 Physics and ISS Alumni.

The Foundation also supports the School's media, publications, events and fundraising with all these areas linking into alumni activities in terms of communication, connection and highlighting the School's achievements.

### PUBLICATIONS

The Foundation pays for the printing and postage of *Alumni News* and the School of Physics calendar. In 2010 *Alumni News* was printed for the first time in full colour with page numbers increasing from eight to twelve. In 2011 *Alumni News* will be published in three issues – Autumn, Winter and Spring/Summer. Physics Alumni receive their copies of *Alumni News* with the Sydney Alumni Magazine (SAM).

### UNTIED FUNDS

As well as the aforementioned areas the Foundation provides untied funds to assist the School of Physics in areas where conventional funding is difficult to obtain. The Foundation was pleased to be able to transfer the full budgeted \$100,000 to the School in 2010.

## EVENTS AND ACTIVITIES



*Dr Barry Jones AO speaking at Messel Tribute*



*Lord Robert May of Oxford OM AC Kt FRS with Emeritus Professor Harry Messel AC CBE*

### “HONOURING EXCELLENCE”

#### A TRIBUTE TO EMERITUS PROFESSOR HARRY MESSEL AC CBE

On Thursday 20 May 2010 the Science Foundation for Physics honoured its founder, Emeritus Professor Harry Messel AC CBE, and celebrated his 88th birthday.

Around 500 alumni, friends and VIP guests filled the University of Sydney’s Great Hall to hear tributes by special guests who acknowledged Professor Messel’s significant contribution to science and technology within Australia.

With Robyn Williams AM as MC and special guests speakers including HE Professor Marie Bashir AC CVO, Governor of NSW & University of Sydney Chancellor, NSW Chief Scientist - Professor Mary O’Kane, Mr Albert Wong on behalf of The Hon. Neville Wran AC, Professor Mitchell Guss, Lord Robert May of Oxford OM AC Kt FRS and Dr Barry Jones AO giving insights and some personal anecdotes into various periods of Professor Messel’s time at the School of Physics the night was a spectacular success.

Those who could not attend the event sent messages to wish Professor Messel the very best. These well-wishers included Senator Kim Carr, the Hon. Jodi McKay, Adam Spencer and Chief Justice Robert French (ISS1964).

A short film highlighting his time as Head of School showed the appreciative guests Professor Messel as a man whose passion and enthusiasm for physics knows no bounds. His inspirational vision for a science literate community and the encouragement of young people to pursue a career in science was also highlighted.

The evening included the surprise announcement by Albert Wong of a gift of \$100,000 from both him and his wife, Sophie. An anonymous gift of \$50,000 was made by an ISS alumni member in appreciation of time spent at the Professor Harry Messel International Science School.

As well another \$100,000 donation from Physics Alumnus, Dr John Graham, who is based in the USA, was presented to the delight of Professor Messel.



Dr William Phillips Talk



### TIME EINSTEIN AND THE COOLEST STUFF IN THE UNIVERSE

*Time Einstein and the Coolest Stuff in the Universe* was a Sydney Ideas talk presented by US 1997 Nobel Laureate for Physics and quantum physicist Dr William D. Phillips. The talk was organised by the School of Physics with support from the Science Foundation for Physics.

An audience of close to 500 were intrigued and appreciative of the highly informative and lively lecture which had a focus on trapping atoms and the use of liquid nitrogen.

The children (old and young!) were especially delighted by the smashing of frozen carnations and the emergence of dozens of balloons from the liquid nitrogen container when only four had been counted being put in. The demonstration of 'spinning an atom' to show its resistance to a magnetic force drew applause. The queue of people lining up to ask questions was long and showed no signs of dissipating; however the talk (eventually) concluded with a thank you presentation to Dr Phillips.

The audience were not the only ones who enjoyed themselves with Dr Phillips subsequently sending an email message to the School saying, "First I want to thank you for a great visit. The public lecture went very well, and I was really happy to have such good questions. I certainly hope that the next time I am in Sydney I will get a chance for a proper scientific visit to your labs and those of your colleagues."

Thanks to Dr Michael J. Biercuk, his former colleague from the USA based National Institute for Standards and Technology (NIST), for having invited him to Sydney. We certainly hope to see Dr William Phillips again in the near future.

## JULIUS SUMNER MILLER FELLOW

In 1995, the Foundation established the position of Julius Sumner Miller Fellow within the School of Physics, with the aim of raising community interest in science. Since then, the position has been held by radio/TV personality, prolific author and all-round science guru, Dr Karl Kruszelnicki. The following report is from the JSM Office by Dr Karl and Caroline Pegrum.

2010 was another big year packed with loads of science and promotion, as Dr. Karl Kruszelnicki completed his 16th year as the Julius Sumner Miller Fellow. In his position as the JSM Fellow, Karl continued to fly both the Physics and University flags as he continued on his mission to encourage and recruit students into science-based courses and careers.

### TELEVISION

In November/December 2010, the second series of *Sleek Geeks* was broadcast on ABC 1 (TV). *Sleek Geeks* is a co-production between Dr Karl, Adam Spencer, Caroline Pegrum and Logie Award winning production company Cordell Jigsaw (*Bondi Rescue*, *Two Men In The Top End*, *Recruits*) and the ABC. The ABC have been pleased with the ratings and the audience share (15.2%), that Series Two of *Sleek Geeks* has achieved to date.

Once again the University Of Sydney proved an amazing source of research and content during making of *Sleek Geeks*. The Faculty Marketing Team provided us with many useful contacts, and the EMU were particularly helpful when it came to providing images for use in the series. A special thanks goes out to Nathan Apps (Lecture Dem, Physics) for the amount of time and effort he put into helping with equipment for our live experiments.

Karl has also continued his many regular television appearances on various TV shows, including his semi-regular segment on Channel 7's Sunrise breakfast program

### RADIO

Karl continued his three to four hours of national radio on the ABC every week. These regular radio segments provide an excellent opportunity for Karl to discuss interesting and relevant research projects being carried out within the University, and to promote university events, such as the Sydney Science Forum Lecture series. Of course, he makes frequent references to the University of Sydney, and his home, the School of Physics.

Karl's radio regular weekly science talkback program on BBC Five Live program 'Up All Night' has continued to grow in popularity, with audience feedback increasing enormously. This program is transmitted across the UK on Thursday mornings to a growing audience of around 1.5 million people.

### INTERWEB

Dr Karl's presence on the Internet has expanded greatly with Karl adapting to some of the newer applications like, Twitter.

In mid 2010, *drkarl.com* was re-launched. With a brand new Content Management System (CMS) in place, we now have much greater flexibility and control over the content. This new system allows the advertising of University and other science-related events to happen more efficiently. Dr Karl's ABC Webpage is still enormously popular, and is currently responsible for almost one-half of all visits to the ABC Science webpage, and about 5% of all Internet traffic to the ABC.

### PODCASTS

The times they are a changin' ... Karl now has four podcasts in all. Two podcasts are available via the ABC; both are enormously popular and make regular appearances in the iTunes top ten podcast chart.

The figures per month are around 270,000+ downloads. Example figures for August 2010:

1. Triple J hour (133,084)
2. Great Moments In Science (80,569)

In October 2010, we added another downloadable file, Dr Karl's Blogcast. With only five episodes having been released, this Blogcast has already made its way into the top ten charts on iTunes.

We have no control over the BBC podcast, apart from its content. This particular podcast is growing rapidly in popularity.

### TWITTER

In 2009 Karl joined the Twitterati and began the process of tweeting to his followers. In the usual Karl style, he began to use Twitter in a different way to most, answering questions and asking questions – not an easy thing to do in fewer than 140 characters. By November 2010, Karl had in excess of 30,000 'followers', with this figure increasing by a few hundred every week. This volume of 'followers' serves as a pretty good instant database which can be used to alert people to events, competitions etc.

### BOOKS

In August 2010 Karl released book No. 29, *Dinosaurs Aren't Dead*, into the children's market. The release of this book coincided with an extensive speaking tour to many schools around the country.

In November 2010, Karl's 30<sup>th</sup> book (first ever hardback), *Curious & Curiouser*, was released into the adult non-fiction market. To date this book is outselling Karl's previous two books, showing that there is still a high demand for Karl's work in the market place.

*Dr Karl on a  
trampoline of cornflour  
Ruben Meerman looks  
on. ABC Credit*



### SLEEK GEEKS EUREKA SCHOOLS PRIZE

The Sydney Uni Sleek Geeks Eureka Schools Prize, now into its fifth year, continues to grow in popularity. Students are asked to communicate a science related story or concept in a fun and interesting way through a 1–3 minute video piece.

The format of this prize has continued to strike a real chord with the students, and that is continuously reflected in the quality and volume of entries.

The finalist in all categories spent a very special day at Sydney Uni with Dr Karl and Adam Spencer, ahead of attending the Eureka Awards Dinner where the winners were announced. The finalist films were played during the course of the Eureka Awards dinner, once again providing a sense of fun to the evening.

ABC TV's 'Catalyst' filmed the Sleek Geeks prizewinners, and also showed excerpts of the winning films in their Eureka Awards special show. This episode was aired a week after the Eureka Awards dinner.

The *Sleek Geeks* prize-winning entries are available for viewing via ABC online:

[www.abc.net.au/science/sleekgeeks/eureka/2010](http://www.abc.net.au/science/sleekgeeks/eureka/2010)

### SCHOOL VISITS

The introduction of five dedicated dates for Dr Karl talks to big school groups has proven to be a successful way to deal

with school requests for Dr Karl. These talks are held for approximately 500 students at a time in the Eastern Avenue Lecture Theatre. These are in addition to the talks that Karl does when students visit the University for a "tour" of the Faculty of Science.

Although we have the dedicated university school talk dates, Karl has continued to do many school visits outside of the university where possible.

Karl once again visited Taiwan, speaking to many school and university students. The feedback from this tour was fantastic.

### MEDIA/SPEAKER TRAINING

In November 2010, Daniel Huber (physics PhD) put his hand up to represent Sydney University at the Australian Institute of Physics NSW Branch Postgraduate Award Speaking Competition. Karl and Caroline saw Daniel as the perfect opportunity to give something back, and in turn put their hand up to mentor him and provide feedback and advice on his presentation. After many hours together refining his talk, they were delighted when they received a text that read, "...We won, thanks so much for your support and encouragement! Daniel"

The plan for 2011 is to provide much more of this type of support and training to students and staff within both Physics and the Faculty of Science.

## THE MESSEL ENDOWMENT



*Emeritus Professor Harry Messel with Professor Marie Bashir*

The Science Foundation for Physics established the Messel Endowment in 1999 to ensure the Professor Harry Messel International Science School (ISS) continues in perpetuity.

Currently there are over 200 supporters to the Messel Endowment. These generous supporters are acknowledged in the Messel Endowment honour board that is published within this Annual Report, the ISS Book of Lectures and the Messel Endowment Banner displayed in the Slade Lecture Theatre. As well the honour board is published online.

Currently the Endowment holds \$3,634,844 in funds.

In 2010 \$306,000 was donated to the Messel Endowment.

The Foundation is appreciative of all our donors to the Messel Endowment. Without this valued support the ISS could not continue its important work of honouring excellence in outstanding Year 11 and 12 science students from Australia, China, Japan, Malaysia, New Zealand, Singapore, Thailand, the UK and the USA and encourage them to pursue careers in science.

The Endowment seeks to accrue further funds through gifts, grants and bequests to ensure the ISS can be run in perpetuity whilst allowing for inflation over the years.

Donations of \$2.00 and over are tax-deductible. Pledged gifts (donations spread over a three to five year period) are welcome and are also tax deductible.

The ISS now has over 4,000 alumni with many going onto outstanding careers, in their chosen fields including science, medicine, engineering and technology.

Please help us in continuing to offer this world-class program to these talented students who come from diverse cultures and backgrounds.

Donations to the Messel Endowment can be made online, over the telephone, via mail or fax.

A donation to the Messel Endowment is an investment in the future of science.

For more information visit: [sydney.edu.au/science/physics/foundation](http://sydney.edu.au/science/physics/foundation)

*the*  
**MESSEL**  
ENDOWMENT  
Science Foundation for Physics.

# 2010 FINANCE STATEMENTS

The University of Sydney  
The Science Foundation for Physics

Income Statement  
for the year ended 31st December 2010

	2010	2009
	\$	\$
<b>INCOME</b>		
Grants, Scholarships, Donations and Bequests	321,521	196,874
Business and Investment Income	751,111	635,540
Internal and Other Income	(17,167)	73,806
<b>Total Income</b>	<u>1,055,465</u>	<u>906,220</u>
<b>EXPENDITURE</b>		
Salaries	124,217	236,877
Consumables	1,637	3,750
Equipment and Repairs / Maintenance	1,208	909
Services and Utilities	18,574	21,610
Travel, Conferences, Entertainment	12,297	23,168
Contributions to External Organisations	-	3,000
Contributions to School of Physics	100,043	62,000
Messel Endowment Contributions to ISS	-	57,568
Student, Printing and Library	40,580	264,406
Other Expenses	23,394	43,358
<b>Total Expenditure</b>	<u>321,950</u>	<u>716,646</u>
<b>SURPLUS / (DEFICIT)</b>	<b>733,515</b>	<b>189,574</b>
Accumulated Funds as at 1st January	14,014,068	13,824,494
<b>ACCUMULATED FUNDS AS AT 31ST DECEMBER</b>	<u>14,747,584</u>	<u>14,014,068</u>

*I certify that the Income Statement and Balance Sheet of the Foundation have been prepared in accordance with the University's accounting practices and procedures. These Foundation accounts form part of The University of Sydney's financial reports which have been audited by the Auditor-General, New South Wales.*

*Marlyn Horgan*

Marlyn Horgan  
Finance Manager  
School of Physics

1/3/11

*Ian Ford*

Ian Ford  
Director  
Finance Management and Analysis

The University of Sydney  
The Science Foundation for Physics

**Balance Sheet**  
as at 31st December 2010

	2010	2009
	\$	\$
<b>ASSETS</b>		
<b>CURRENT ASSETS</b>		
Funds Participating in University Pool Interest	7,872,584	7,139,068
<b>Total Current Assets</b>	<b>7,872,584</b>	<b>7,139,068</b>
<b>NON CURRENT ASSETS</b>		
Investments	6,875,000	6,875,000
<b>Total Non Current Assets</b>	<b>6,875,000</b>	<b>6,875,000</b>
<b>TOTAL ASSETS</b>	<u><b>14,747,584</b></u>	<u><b>14,014,068</b></u>
<b>NET ASSETS</b>	<u><b>14,747,584</b></u>	<u><b>14,014,068</b></u>
<b>EQUITY</b>		
Accumulated Funds	<u>14,747,584</u>	<u>14,014,068</u>
<b>TOTAL EQUITY</b>	<u><b>14,747,584</b></u>	<u><b>14,014,068</b></u>

**Notes to the 2010 Financial Statements**

1. The financial statements have been prepared on a modified accrual accounting basis.
2. All fixed assets expenses are expended in the year of purchase. Property at Molonglo was purchased with funds from The Science Foundation for Physics.
3. Employee entitlement for Long Service Leave are held centrally in the University's account.
4. The University (including Foundations) is exempt from income tax.
5. Accumulated Funds include \$3,634,844 of the Messel Endowment (\$3,250,014 in 2009) managed by The Science Foundation for Physics to retain its real value in accordance with the commitments made by The Science Foundation for Physics when the Endowment was established.
6. Non Current Growth Fund Investments are recorded in the financial statements of the Foundation at their initial book value (cost). Due to the volatility in the global financial markets, the fair value of these investments can increase or decline; however any increase or decline is not reflected in the Foundation accounts which carry the investment at cost. A reconciliation to market (fair) value is provided below.
7. Contribution towards the Julius Sumner Miller Fellow, Dr. Karl Kruszelnicki is included in Internal & Other Income.

**Growth Fund Investment as at 31 December 2010**

Book value of Investments	6,875,000
Unrealised Gain / (Loss)	<u>135,069</u>
Market value of investments	<u><b>7,010,069</b></u>



THE UNIVERSITY OF  
**SYDNEY**

Annexure 1

NSW 2006 AUSTRALIA

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**TO:** Financial Control and Treasury

**FROM:** University Officer (Foundation)

**DATE:** 1 March 2011

**SUBJECT:** Certificate of Operations

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### CERTIFICATION

I hereby certify that the activities reflected in the Financial Statements for the year ended December 31, 2010 of the Science Foundation for Physics fully complies with the Foundation Rules.

Any areas of non compliance or departure from such governing rules have been advised in writing to the Provost / Deputy Vice-Chancellor responsible for overall governance of the Foundation's operations.

Signature  
University Officer (Foundation)

Prof Trevor Hambley  
Dean  
Faculty of Science

---

Name (Please Print)

Date: 1 / 3 / 11

## 2011 SUPPORTING SCIENCE

Albert & Sophie Wong  
donated \$100,000 to  
the Messel Endowment  
in 2010



### A GIFT TO SCIENCE

The Science Foundation for Physics is a not-for-profit organisation established in 1954 by Professor Harry Messel for the purpose of supporting science research, education and training within the School of Physics and for the promotion of science to the broader community.

The Foundation can only continue its important work through the generosity of visionary supporters. If you would like to make a tax-deductible gift to the Foundation you can contact Ms Alison Muir, Acting Manager, Science Foundation for Physics, using the details below.

Alternatively you can make donations to the Foundation on line at:

[sydney.edu.au/supportsydney/areas/foundations.shtml](http://sydney.edu.au/supportsydney/areas/foundations.shtml)

### BEQUESTS

By making a bequest to the University of Sydney for the Science Foundation for Physics, you have the opportunity to make an enduring contribution to the advancement of research, education and training within the School of Physics and in the broader community.

Leaving a bequest to science will ensure that future generations of students and researchers benefit from your foresight and generosity.

To enable the Science Foundation for Physics to direct funds to our most important priorities, we suggest the following clause in your will, or a codicil to your will:

*'I give [insert dollar amount / percent of my residuary estate] to the University of Sydney ABN 15211 513 464 ("University") of the University of Sydney, NSW 2006 for the general purposes of the University in the field of physics as advised by the Science Foundation for Physics.'*

If you are considering a specific bequest to the University, we can provide more information in person. Please contact Wendy Marceau, Manager, Bequests, University of Sydney, directly on +61 2 8627 8492 to discuss your wishes in confidence.

By advising us of your gift to the University in your will, you will be invited to join the Challis Bequest Society. The Challis Bequest Society acknowledges your vision and generosity through invitations to University special events.

For more information on how you can support The Science Foundation for Physics please contact Alison Muir directly on +61 2 9036 5194 or email: [alison.muir@sydney.edu.au](mailto:alison.muir@sydney.edu.au)

## MESSEL ENDOWMENT DONOR HONOUR BOARD 2010

The Science Foundation for Physics established the Messel Endowment in 1999 to honour Professor Harry Messel and to ensure Professor Harry Messel International Science School, run continuously since first being launched in 1962, continues in perpetuity. The Endowment is managed to preserve the real value of all donations received.

From 2004 to 2006 the Messel Endowment Capital Campaign Committee, chaired by Mr John Hooke CBE, raised approximately \$3million. To date approximately \$3.6 million has been raised. The Foundation thanks and greatly appreciates our dedicated volunteers and our donors.

### EXTRA GALACTIC DONORS - \$1MILLION AND OVER

Australian Government through the Department of Innovation, Industry, Science and Research(DIISR)  
Mr Ming Tee Lee through Mulpha Australia Limited

### GALACTIC DONORS - \$100,000 TO \$999,999

Dr John Graham  
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Mr Raymond Walton & Mrs Margit Walton  
Mr Thomas M F Yim on behalf of Alex Yim

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The Super Secret Club of ISS2005  
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Ms Anne Woods  
Mr Thomas M F Yim on behalf of Jerome Yim  
Dr Xian Zhou  
Fr Mervyn J F Ziesing



Her Excellency Professor Marie Bashir AC CVO, Governor of NSW, holds a thank you gift while Mr Trevor Danos looks on at Honouring Excellence

**SCIENCE FOUNDATION FOR PHYSICS**

School of Physics A28

The University of Sydney NSW 2006

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**W** [www.physics.usyd.edu.au/foundation](http://www.physics.usyd.edu.au/foundation)

**FACULTY OF  
SCIENCE**



THE UNIVERSITY OF  
**SYDNEY**

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