



THE UNIVERSITY OF
SYDNEY

The University of Sydney Physics Foundation

Annual Report 2017





The University of Sydney Physics Foundation

Annual Report 2017

Contents

02	President's Report
04	Physics Foundation objectives and aims
05	The Messel Endowment
06	Physics Foundation members
08	The Physics Foundation supporting the School of Physics
09	ISS 2017 Future Power
12	Dr Karl Kruszelnicki AM Julius Sumner Miller Fellow
16	Foundation Governance Statement
17	Financial Control and Treasury Certification
18	2017 Finance Statement
19	2017 Balance Sheet

Contributors: Ms Isabelle Benton, Dr Karl Kruszelnicki AM, Dr Chris Stewart, Ms Annalee Powell, and Emeritus Professor Anne Green FTSE.

Layout: Ms Annalee Powell.

Printer: Finline Print & Copy Service NSW.

President's Report



It is my privilege and pleasure to present the 2017 Annual Report for the University of Sydney's Physics Foundation. The past 12 months has been a year of great activity, with the major event being the staging of the 39th Professor Harry Messel International Science School (ISS), titled "Future Power". ISS2017 was a great success, with a full report presented later in this report. It was held in the first half of July with 133 students from eight countries participating. There were slightly more boys than girls in this ISS, but this was mostly due to the imbalance in gender from some of the international cohort. The topic of "Future Power" is highly relevant at the present time and the students were overall very positive in their feedback on the lectures and activities.

I would particularly like to thank the ISS Director, Dr Chris Stewart, and his support staff for their outstanding efforts in making ISS2017 such a success. The support of the Faculty of Science was also very valuable.

At the Gala Reception we were fortunate to have in attendance the Hon. Arthur Sinodinos AO, Minister for Science and Innovation. In his address that evening, he spoke of the importance of the ISS and why its continuation and ongoing financial support was vital. He intimated that consideration was being given at the highest levels of Government to support this cause.

Planning and discussions have already begun for ISS2019. This will be the 40th ISS and also 50 years since the first Moon landing, so we will be making the event truly memorable. However, it is an ongoing challenge to guarantee that the ISS be funded into the future as a legacy of Professor Harry Messel and his fundamental goal of the pursuit of excellence in science. A Committee to develop a strategy to secure funding was formed and letters have been sent to the Prime Minister urging his consideration. A very supporting article was published on 31 December in the Daily Telegraph by a senior influential journalist. Thank you to Past President Mr Albert Wong AM for achieving this publicity and it would be excellent if Government support was forthcoming.

Following the successful official launch of Sydney Nano, we were very pleased to attend the opening of the Dry Laboratory in the new building, named in honour of Mr John Hooke CBE FTSE, who was a long-time member of Council and past Chair of the Messel Endowment fundraising committee. Several members of Council attended the opening, which was led by the Vice-Chancellor.

In May, the Vice-President, Professor John Mattick AO FAA FTSE, deputised for me at the annual School of Physics prize-giving ceremony. It is very pleasing to reward so many talented science students, across all undergraduate years. The Foundation awards 20 scholarships to recognize excellence and to encourage further study in physics. For 2017 the number of female recipients were lower than we had hoped, a result that can be improved especially as the ISS continues to show leadership in the gender equity and diversity space. The Foundation has been able to support the School in several ways, with a total of \$300,000 transferred in 2017.

Support was provided to our Julius Sumner Miller Fellow, Dr Karl Kruszelnicki AM, and to Dr Chris Stewart. This is a very pleasing outcome and we gratefully acknowledge all donations to the Foundation and the Messel Endowment to enable this support to continue.

It is with great pleasure that the Foundation congratulated Mr Albert Wong AM on his award of an honour in the 2017 Australia Day Order of Australia Awards. He has made outstanding contributions in several areas, but we are deeply appreciative of his long-standing contribution to the Council of the Physics Foundation, particularly for his four years as President (2013 – 2016).

It is a personal honour for me to have been appointed as President of this distinguished Foundation in 2017 and I would like to express my thanks to Mr Wong, the outgoing President for his outstanding service to the Foundation over so many years. This will also be the last year with Professor Tim Bedding as Head of School and Director of the Foundation, and with Professor Trevor Hambley FAA as Executive Dean of Science and University Officer. To both, thank you for your exceptional support and guidance.

The incoming Head of School is Professor Céline Boehm, most recently at Durham University in the UK, commences her role in March 2018. On behalf of the Council, I warmly welcome Professor Boehm and look forward to working with her to further the aims of the Foundation.

My thanks to all the Council members for their commitment to the Foundation over this past year, in particular to Professor John Mattick AO FAA FTSE, Deputy President, who has very ably deputised for me on many significant occasions. Thank you to Ms Annalee Powell for her excellent administrative support throughout the year. To Ms Eve Teran, special thanks for her outstanding support of the work of the Foundation until her departure mid-year from the School of Physics. We also welcome and thank new arrivals, Ms Clara Spencer, School Manager, and Mr Andrew Sheldon-Collins, Executive Officer. It is with great anticipation that we look forward to another exciting year in achieving the pursuit of excellence.

Yours sincerely,

Emeritus Professor Anne J. Green FTSE, FAIP, FASA
President, Physics Foundation

Physics Foundation objectives and aims



The University of Sydney Physics Foundation, 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 to support the School of Physics as a voluntary 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 non-financial contributions) to assist the Senate and the Vice-Chancellor in the promotion of the field of physics, through the School of Physics and

- To cooperate 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, through its scholarships, the purchase of equipment, and the underwriting of other 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 to take up science careers.
- Any other initiatives and activities as the Foundation determines appropriate.

The Messel Endowment

The Physics Foundation 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 on the Physics Foundation website.

The two largest donors to date have each donated over \$1 million. These donors are classed as Extra Galactic Donors and are:

- Australian Government through the then Department of Industry.
- Mr Lee Ming Tee, through Mulpha Australia.

Currently the Endowment holds **\$5,401,039** in funds. In 2017 \$5,496 was donated to the Messel Endowment.

The Physics 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, India, Japan, New Zealand, Singapore, Thailand, the UK and the USA and encouraging 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 with due allowance for inflation over the years.

Donations of \$2 and over are tax-deductible. Pledged gifts (donations spread over a three to five year period) are welcome and are also tax-deductible.



Careers and achievements

The ISS now has over 4,200 alumni with many going on to outstanding careers achievements in their chosen fields including science, medicine, engineering and technology.

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

Donations of \$2 and over are tax-deductible. Pledged gifts (donations spread over a three to five year period) are welcome and are also tax-deductible.

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, or via mail.

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

For more information visit sydney.edu.au/science/physics/foundation

Physics Foundation members

Foundation staff

Professor Tim Bedding, Head, School of Physics,
Director

Ms Annalee Powell, Project Officer

Patron

General David Hurley, AC DSC

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 AM FTSE (1993)

Mr Paul Slade (1996)

Mr Graham Hall (1999)

Mr Pat Donovan AM RFD ED (2002)

Mrs Louise Davis (2005)

Mr Trevor Danos AM (2008)

Mr Jim O'Connor (2011)

Mr Albert Wong AM (2013)

Past Directors (initial year of directorship shown)

Emeritus Professor Harry Messel AC CBE (1954)

Emeritus Professor Max Brennan AO FAA (1987)

Professor Lawrence Cram (1991)

Emeritus Professor Richard Collins FTSE (1997)

Professor Bernard Pailthorpe (2002)

Associate Professor Robert Hewitt (2003)

Professor Anne Green FTSE (2006)

Professor Clive Baldock (2010)

Foundation Council 2017

Office Bearers of the Foundation

Emeritus Professor Anne Green FTSE, President

Professor John Mattick AO FAA FTSE, Deputy
President

University Officer

Professor Trevor Hambley FAA, Dean of Science

Council Members

Professor Dame Marie Bashir AD CVO

Mr Albert Wong AM

Dr Gregory Clark AC FTSE

Mr Trevor Danos AM

Professor John Mattick AO FAA FTSE

Professor Greg McRae

Professor Susan Pond AM FTSE

Mr Michael Winternitz

University Ex Officio Council Members

Ms Melinda Deerling

Ms Melissa Bonevska

Foundation Members

Founder

Emeritus Professor Harry Messel AC CBE

Life Governors

Mrs Louise Davis

Associate Professor Robert Hewitt

Mr John Hooke CBE FTSE

Dr David Mills AM

Mr Jim O'Connor

Mr Martin Rogers

Mr Paul Slade

Mr Albert Wong AM

Foundation Members...continued

Honorary Governors

Mr Tony Aveling

Emeritus Professor Max Brennan AO FAA

Emeritus Professor Richard Collins FTSE

Professor Lawrence Cram

Mr Raymond Kirby AO

Mr John Slade

Individual Members

Professor Dame Marie Bashir AD CVO

Dr Gregory Clark AC FTSE

Mr Trevor Danos AM

Professor Anne Green FTSE

Professor John Mattick AO FAA FTSE

Professor Greg McRae

Professor Susan Pond AM FTSE

Mr Michael Winternitz

Corporate Members

The James N. Kirby Foundation

The Nell and Hermon Slade Trust

The Physics Foundation supporting the School of Physics



The Physics Foundation supports the School of Physics in several ways. These include a direct grant of untied funds, 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 also contributes funding towards the Julius Sumner Miller Fellowship, held by Dr Karl Kruszelnicki.

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 twelve years the alumni and community engagement activities of the School have benefitted from the promotion and management of events, and production of interesting content for Physics News (previously known as Alumni News).

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 more than 5,000 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 Physics News. In 2016 Physics News was published in two issues - Spring and Autumn. Physics Alumni receive their copies of Physics 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 \$300,000 to the School for 2017.

ISS 2017 | Future Power

The 39th Professor Harry Messel international science school, ISS2017: Future Power, ran from 2 to 15 July 2017, with a focus on the challenges, opportunities, research and technology for the world's energy future.

The theme incorporated science across a broad spectrum of disciplines, from fusion power and high-efficiency solar, to smart grids, energy modelling and biofuels, to medical physics, astronomy and scientific ethics.

Over 130 senior secondary school science students attended ISS2017, representing every state and territory in Australia and seven overseas countries. They were treated to a unique lecture series by leading researchers, participated in hands-on activities in disciplines across science and engineering, and enjoyed a host of social events. The feedback we received from the ISS scholars shows that, for many of them, their time at the ISS is transformational. Their messages of thanks attest to the truth in the traditional words of welcome to the International Science School:

"The ISS will be the best two weeks of your lives."

The ISS2017 Scholars

Chosen by our selection panels across Australia, students attended the ISS from every state and territory of Australia: Australian Capital Territory (2), New South Wales (50), Northern Territory (3), Queensland (11), South Australia (4), Tasmania (3), Victoria (10) and Western Australia (6). International scholars came from China (9), India (5), Japan (9), New Zealand (6), Thailand (7), the United Kingdom (5) and the United States of America (5).

Two Weeks of Inspiring Science

The ISS was formally launched by Mr Mark Scott AO, Secretary of the NSW Department of Education, at the official Opening Ceremony on Monday 3 July in the University's new Harry Messel Lecture Theatre. Following the opening, the first lecture on high-efficiency solar cells was delivered by ANU's Prof. Kylie Catchpole.

The lecture series featured researchers selected for their area of expertise, scientific reputation and communication prowess. For the first time in the history of the ISS, women comprised the majority of the speaker program.

The lecture series included:

Prof. Steve Cowley (Oxford, UK), Fusion Energy and ITER

Prof. Kylie Catchpole (ANU), The Future of Solar Energy

Associate Prof. Tara Murphy (Sydney), Exploring the Transient Universe

Prof. Andrew Stuchbery (ANU), Nuclear Power: Past, Present & Future

Dr Jenny Gerbi (ARPA-E, USA), Thirty Million Dollars to Change The World

Associate Prof. Bernadette McCabe (USQ), Bioenergy

Dr Karl Kruszelnicki (Sydney), Great Moments in Science

Dr Nicole van der Laak (USYD & Gelion), Battery Basics & Making Them Better

Prof. Annette Haworth (Sydney), Medical Physics: From Curie & Schrödinger to Curing Cancer

Dr. Jenny Hayward (CSIRO), Modelling The Energy Future

Prof. Tony Vassallo (Sydney), Smart Grids



ISS 2017 | Future Power



Professor Steve Cowley from Oxford describes a future powered by nuclear fusion



Associate Professor Tara Murphy inspires the scholars with her research on extreme events in the universe.



Testing the students' bridge designs to destruction during the Science & Engineering Challenge



During the ISS, the scholars took part in lab tours and hands-on experiments in biosciences, chemistry, engineering, ag science and many other disciplines across the University of Sydney

Outside the lecture theatre, the students toured research facilities across the university, met early-career scientists at a lightning meet-and-greet event, competed for glory in the Science & Engineering Challenge, learnt about Indigenous Australian environment management, received five decades of wisdom and encouragement from our ISS Alumni Panel, and took part in workshops designed to challenge and expand their understanding of ethics and scientific leadership.

As usual, our good friends in the Young Scientists of Australia Sydney Branch entertained the scholars with a rich program of social events throughout the fortnight, from trivia competitions to movie nights.

The traditional ISS Gala reception was held on 9 July in the Great Hall. This event is an opportunity for alumni, donors, friends and university staff to meet the scholars first hand, to celebrate the long history and toast the future of the program. MC for the evening was Adam Spencer, radio and TV presenter, Sleek Geek, and science ambassador for the University of Sydney, who kept more than 400 guests entertained throughout and ensured the event ran smoothly.

The ISS Book and Video Series

We have produced a book to accompany every International Science School; in recent years this has contained interviews with the scientists discussing their work, influences and experiences, and thoughts on the future of their disciplines. All participants received the book on arrival, and copies were presented to each lecturer also. The ISS2017 book is available in PDF and e-book formats from the ISS website:

sydney.edu.au/science/iss

Since 2005 we have recorded the ISS lectures and made them available on the web. The entire 2017 lecture series is available on our YouTube channel at:

youtube.com/TheSydneyISS

Huge Thanks to All Our Supporters

The ISS could not run without the generous support of our financial and logistical supporters. We receive considerable funding from the NSW Department of Education, and we are grateful for their support over many years. We also thank the many donors to the Messel Endowment, set up by the Physics Foundation with the aim to fund the ISS in perpetuity — in particular, the Australian Government through the Department of Industry, Innovation & Science, and Mulpha Australia.

The NSW Department of Education also assists with the selection of the NSW scholars, as do the Science Teachers Associations in every state and territory. The overseas student selections are coordinated by partner organisations in each country, who also contribute scholars' airfares to Sydney. Each of these groups is invaluable to the success of the ISS.

The local team behind the program is larger, and works harder, than the scholars ever imagine. We are indebted to all who made the program run smoothly, particularly: the Faculty of Science Engagement & Outreach team; the Science Communicators across the Schools and research groups of the University; the staff of the School of Physics and members of the Physics Foundation; and particularly Teagan Jenkins, who landed in the middle of the busiest period of ISS planning and got the job done with grace and humour.

A complete overview of ISS2017 is available in the full report at:

sydney.edu.au/science/iss

[Student Quote]

"The two weeks in the ISS was the most meaningful, fulfilling, exciting time in my life. It was an experience we can not gain anywhere else."

ISS2017 Scholar

Dr Karl Kruszelnicki AM | Julius Sumner Miller Fellow

The Science Foundation established the position of Julius Sumner Miller Fellow within the School of Physics in 1995. The aim was to foster community interest in both science and the University. The Fellow's mission is to champion Physics, Science and the University of Sydney in order to educate, encourage and recruit students into science-based courses and careers.

Science author, media personality and broadcaster Dr Karl Kruszelnicki has filled the position of Fellow since its inception. Dr Karl's boundless curiosity, eagerness to share his science brain and his passion for Physics (a degree in 'How to Solve Problems' he says) ensured that 2017 was a year brimming with science engagement and action.

In 2017, new media opportunities for science promotion were harnessed, more University academics were brought into the public eye on both radio and TV, social media engagement increased, there were more University-based activities and contact with schools, technology enabled greater science outreach, especially to regional areas, and Dr Karl realised a lifelong dream – to appear on Playschool.

An extra component was added – personal mentoring of students into the media. This has begun with Jessica Bloom and Petr Lebedev from the School of Physics

Staff

Isabelle Benton continued assiduously in her lynchpin role as producer, encouraging both collaborative relationships within the university and out into the wider world. Harnessing the power of social media and technology to increase science engagement was a particular focus this year. The talented Chris Norris continued his role as technical producer for the University of Sydney podcast 'Shirtloads of Science'. Phillip Muscatello stepped in during Chris' short absence.

University of Sydney Events

Dr Karl continued his tradition of University of Sydney events with added extras. Student-driven events included O-week, and a talk and Q&A at Sancta Sophia College about Dr Karl's varied career pathway, and future areas of interest in science and medicine. University of Sydney Union's 'Lunch and Learn' series featured a Q&A with Dr Karl.

University-driven events kicked off with an Information Day talk, and the closing lecture at



Dr Karl takes questions for Sydney Union's 'Lunch and Learn' series, held in the Isabel Fidler Room, Manning House

the Sydney Science Experience Closing Ceremony. Throughout the year other events included Year 10 Information Evenings, Camden Open Day, Spectacular Science, and guided tours of the ABC for promising primary and high school students.

The Sydney Science Forum Public Lecture was again held at the Seymour Centre – a larger venue to accommodate the growing audience numbers of families, school groups and fans. The event was livestreamed via Facebook for the first time, reaching an astounding audience of 41, 053.

Dr Karl continued to donate more of his research and personal letters to the Rare Books and Special Collections section at the Fisher library. Continuing on from this relationship, Dr Karl gave a talk for Rare Bites – a series of informal and entertaining lunchtime talks on treasures held within the Rare Book and Special Collections. Dr Karl spoke on the *Philosophiae Naturalis Principia Mathematica* by Isaac Newton, first edition 1687. A very rare and valuable book.

Dr Karl gave two presentations for the 39th Professor Harry Messel International Science School students, with autographs and selfies delighting the students!

Dr 'Physics' Karl is always open to assist the STEM Faculties when approached. He was asked by the Engineering Faculty to assist in a couple of projects. Karl recorded an introductory video for the Australian Computing Academy to help train teachers in the new Digital Technologies curriculum. He was also the MC for the Zero Robotics programming competition.

National Science Week

The stand-out University of Sydney event for Science Week was SquizCo, Science + Quiz = Comedy. Dr Karl was the Brains Trust, working alongside Adam Spencer and two panels of academics for a highly entertaining and informative evening in a sold-out event at the Great Hall. In a podcasting first, the evening was recorded for Dr Karl's University podcast 'Shirtloads of Science' and is currently sitting on 11,423 downloads. Karl also hosted the University's 3-Minute Thesis Finals Competition.



Dr Karl and Adam Spencer weave their magic at SquizCo for Science Week

School Activities - Skype

An evening Skype session for a school's Science Night during Science Week was extremely exciting for the students and was one of the many school skypes throughout the year. Dr Karl did 53 school skypes throughout the year, including many regional areas and a school in Christmas Island. There is constant demand for these sessions with a waitlist for 2018. Every government school receives a box of Dr Karl's personally signed books for the library (with Sydney University bookplate) and a one-year subscription to National Geographic Kids magazine. We build on these relationships with schools and provide them with more resources available at the University including the ASTRO in the Classroom program. One of the year's objectives was to create an automated Skype Booking System making the process more time effective for both the schools and Dr Karl. We achieved this objective at the end of 2017 and look forward to launching the software in 2018.

Another aspect to getting the schools familiar with using Skype to have on-line interactive discussions is that we are now introducing them to Dr Melanie Bagg, the Publicity Officer at the Australian Academy of Science (in the ACT). (For most of the government schools, getting the software/hardware to work for a Skype Session is a huge effort

– the private schools just get the IT Officers to make it work. We spend a significant amount of time in teaching the government schools how to do this.) After our "training", the schools can now easily ring Dr Bagg to organise a "tame" science expert in virtually any field to "pop up" on their Interactive White Board in their classroom at a moment's notice.

School Visits

The demand for school visits continues to grow, and while the Skypes help reach more students, schools can still book dates for Dr Karl talks at the University. These talks are held for approximately 500 students at a time in the Eastern Avenue Lecture Theatre.

However, Dr Karl has continued to do school visits outside of the university where possible. Rivendell School in Parramatta was particularly rewarding, being one of the only Government dual Education/Health facilities for adolescents experiencing mental health issues in NSW. Dr Karl also visited Randwick Girls High in NSW, and Indooroopilly State High and Mullumbimby High in Queensland.

Dr Karl also gave an inspirational talk for the Country Education Foundation that supports students who overcome financial or geographical limitations. One of the grant recipients was a huge Dr Karl fan, currently undertaking his PhD in Science Communication. He was awe-inspired to meet Dr Karl and gain valuable insights into science engagement.



Chemistry lecturer Dr Alice Williamson, Dr Karl and Astrophysics PhD student Jessica Bloom at the School of Physics preparing for their Shirtloads of Science podcast.

Sleek Geeks Eureka Schools Prize

The University of Sydney Sleek Geeks Eureka Schools Prize, now into its twelfth year, continues to grow in popularity. Students find new ways to communicate a science related story or concept in a fun and interesting way through a 1–3 minute video piece. Sometimes the entire video has been shot on a smartphone!

The format of this prize has continued to strike a real chord with the students. This 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.

Television

Dr Karl's Outrageous Acts of Science featured on Discovery Channel in June. This 10-part Pop Science series featured Dr Karl explaining the science behind some seriously mind-boggling experiments, extraordinary inventions and insane stunts found on the net. Lending their expertise to the commentary were fellow University of Sydney's Jessica Bloom (Astrophysicist), and Dr Alice Williamson (Chemist).

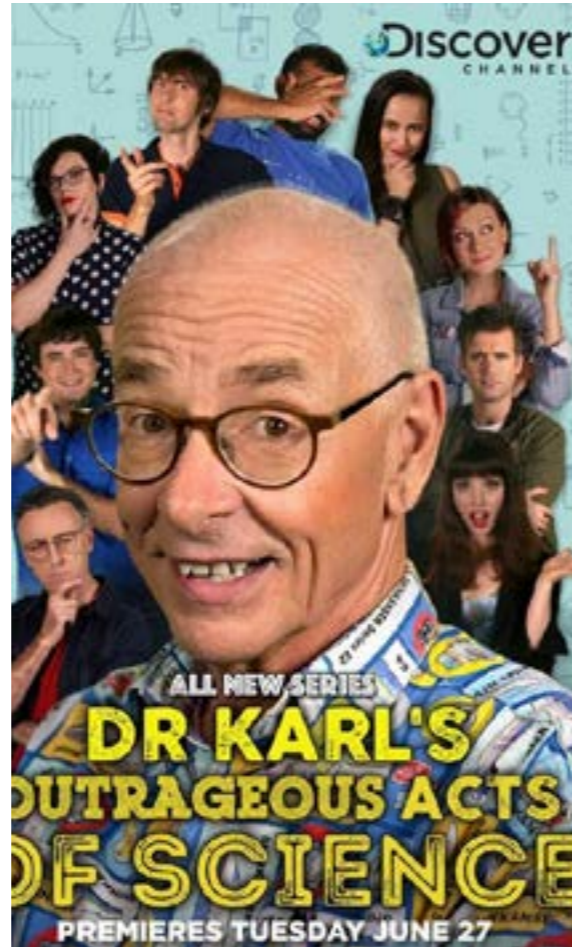
ABC TV News 24 seven-minute segment continued every Sunday morning. Professor Tara Murphy from University of Sydney joined Dr Karl for an episode about the detection of gravitational waves from a neutron star merger – a breakthrough discovery that received world-wide attention.

There were more TV broadcasts on commercial TV, including The Today Show, Sunrise, Today Extra, and The Project.

A TV highlight for Dr Karl was his Playschool audition to be the next host. The audition was played on ABC's New Year's Eve: The Early Night Show. He is still waiting for the call back...

Radio

Dr Karl continued his national ABC radio segments for six hours every week. The Triple J audience in just the five capital cities alone currently attracts over 750,000 listeners. Overall, these regular radio segments provide an excellent opportunity to increase science awareness in the community - by dealing with questions that the listeners specifically want answered. These segments are used (within the context of answering a listener's question) to discuss interesting and relevant research projects carried out within the University.



All 9 students of Dalveen State School in rural Queensland celebrate Dr Karl's visit by posing as Charlie's Angels.

Professors Stephen Bartlett and David Reilly were both Triple J guests, and took questions from the listeners about their work at the University. Karl was also joined on different occasions by international science gurus Brian Green and Bill Nye for a scintillating one-hour talkback.

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 (and the world, live, via the web) on Thursday mornings to a growing audience of around 1.5 million people.

Interwebs

Dr Karl's presence on the Internet expanded with Facebook audience engagement continuing to grow and the popular Facebook Live interviews with the Huffington Post building a steady following. Dr Karl's social media engagement on Instagram, YouTube and Twitter is strong with Twitter Followers now around 37,000 (about 1.5% of the population of Australia).

His website, drkarl.com was redesigned and updated to include University events, Dr Karl science talks in Australia and the UK, media appearances, all science writing and the aforementioned automated booking system for School Skypes. The website effectively advertises the University and other science-related events to a huge fan base. Currently the homepage banner advertises the Sleek Geeks Science Eureka Prize.

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.

Media Highlights

Dr Karl was honoured to feature in a video where he explained Australian of the Year Professor Alan Mackay-Sim's research which has led to ground-breaking advances in the treatment of spinal cord injuries. The aforementioned Dr Karl's Outrageous Acts of Science was up there with exciting media moments as was the filming for Anh Do's Brush with Fame, to be screened on the ABC in early 2018.

On a more personal level, ABC Goulburn Murray made a short film with Dr Karl as he returned to the Bonegilla Migrant Centre, his first Aussie home, where he lived with his parents.

Podcasts

Karl still has four podcasts. Two podcasts are still available via the ABC; both are enormously popular and make regular appearances in the iTunes Top Ten podcast chart. In 2017, there were about 4.5 million downloads of Great Moments in Science (a 5-minute audio science story) and the Triple J Science Talkback segment. The third podcast is the weekly one-hour on the BBC. It is also growing rapidly in popularity.

The fourth podcast is the weekly University of Sydney podcast 'Shirtloads of Science' launched in late 2016 and building an incredible list of guests talking science with Dr Karl. Dr Alice Williamson from the University of Sydney, and Dr Jessica Bloom (who completed her PhD in Astrophysics at the University in 2017) continued as regular guests.

Episodes of particular note include interviews with Dava Sobel, Linda Spilker (chief scientist for the Cassini mission), climate scientist Dr Michael Mann, Professor Geraint Lewis on Gravitational Waves, Derek Mueller, and Dr Karl on board the SOFIA (Stratospheric Observatory for Infrared Astronomy). A real high! Dr Karl also interviewed Bill Nye (the Science Guy) and invited Tom Gordon (Science Communicator at the School of Physics) and Petr Lebedev (PhD student studying Science Communication) to be involved in the interview. Both Tom and Petr were absolutely thrilled with this opportunity.



Petr Lebedev, Dr Karl, Bill Nye and Tom Gordon, an impressive questioning quadruple. Check out the bow ties!

Twitter

In 2009 Karl joined the Twitterati and began the process of tweeting to his followers. This year followers have grown from 306, 000 to 317, 000. An excellent way of communicating with the University marketing team is tagging them with posts about events or competitions, which they retweet to increase audience engagement. Of course, this works the other way around and Karl's Twitter account has been used throughout 2017 to promote university staff events, research and news.

Books and Other Writing

In July Karl released two children's activity books, Dr Karl's Little Book of Space, and Dr Karl's Little Book of Dinos. Book number 43 was released in November, Karl, The Universe and Everything. The book welcomed acclaimed illustrator Jules Faber (who fulfilled one of his lifetime ambitions to work with Dr Karl). Jules complemented Karl's writings brilliantly – with technical drawings as well as cartoons, with the added bonus of comedic genius.

Foundation Governance Statement

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

Principle 1: Lay solid foundations for management and oversight

Nature of the Entity

The Physics Foundation 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.

Principle 2: Structure of the Council to add value

Council members were elected at the Foundation's AGM on 13 March 2017. All terms are annual except for the President and Deputy President who serve for two years. The full Council can co-opt members to fill vacancies outside of the process of election at the AGM.

In 2017 the Council of the Foundation held two Council meetings.

There was not a performance evaluation of the Council undertaken in 2017.

The Council of the Foundation in 2017 consisted of the following members:
(unless otherwise noted all terms are annual)

President, Emeritus Professor Anne Green FTSE
Appointment term: 13 March 2017 until 2019 AGM

Deputy President, Professor John Mattick AO FAA FTSE
Appointment term: 13 March 2017 until 2019 AGM

University Officer Foundation
Professor Trevor Hambley FAA

Members

Professor Tim Bedding, Ex officio representing the School of Physics

Ms Melissa Bonevaska, Ex officio representing the University Foundations

Ms Melinda Deerling, Ex officio, representing the Development Office

Professor Dame Marie Bashir AD CVO

President, Mr Albert Wong AM

Dr Gregory Clark AC FTSE

Mr Trevor Danos AM

Professor Gregory McRae

Professor Susan Pond AM FTSE

Mr Michael Winternitz

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 Code of Conduct Conflict of Interest Policy and OH&S policy 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, prepared by the financial staff of the University and signed off by Finance Director, Faculties of Science, Engineering & Information Technology, 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.

Overall in 2017 the Physics Foundation raised \$5,496. These funds included donations from foundations and a number of individuals.

In conducting fundraising activities the Foundation does not pay commissions to any persons.

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 and 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 two meetings per year of the Council of the Foundation.

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 and printed Physics 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.

- See s5 Charitable Fundraising Act 1991 (NSW)
- Reg 9(6) Charitable Fundraising Regulation 2008
- See s22(2)(b) Charitable Fundraising Act 1991 (NSW)

Council Meeting Attendance 2017

Members of the Foundation Council were eligible to attend two meetings in 2017.

Foundation Council Member	Attended
Professor Dame Marie Bashir	1
Professor Tim Bedding	2
Dr Gregory Clark	2
Mr Trevor Danos	1
Professor Anne Green	2
Professor Trevor Hambley	2
Professor John Mattick	0
Professor Gregory McRae	1
Professor Susan Pond	2
Ms Melissa Benvska	2
Ms Melinda Deerling	1
Mr Michael Winternitz	2
Mr Albert Wong	1

2017 Finance Statement

Uni of Syd Physics Foundation (L7500_SCL_FUND_49123)

Income Statement for the Year Ended 31 December Calendar Year 2017

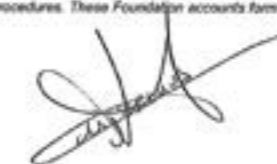
INCOME	Notes	31 December CY2017	31 December CY2016
Grants		94,000	0
Scholarships, Donations and Bequests		17,371	148,491
Business and Investment Income		51,241	99,570
Realised Gain / (Loss) on Investments		206,072	163,582
Unrealised Gain / (Loss) on Investments		1,126,359	958,462
Interest and Other Income		4,203	582,312
Total Income		1,499,246	1,812,417
EXPENDITURE			
Salaries	1	112,688	44,939
Consumables		7,863	126
Equipment and Repairs/Maintenance		5,570	152
Services and Utilities	2	126,488	3,370
Travel, Conferences, Entertainment	2	263,131	4,610
Contributions to School of Physics Accounts	1	300,230	576,312
Student Costs and Scholarships		36,740	19,012
Other expenses	3	63,614	31,347
Total Expenditure		919,333	681,568
Surplus / (Deficit)		579,913	1,230,850
Accumulated Funds		19,949,493	18,718,944
Total Accumulated Funds		20,529,410	19,949,493

Notes To Financial Statement

- In 2017, this represents a \$300k contribution to the School, made of \$100k to support the research maintenance allocations and \$200k to support the general School expenses.
- In 2017 the Foundation supported the International Science School (ISS) operating expenses. A bi-annual event organised by the Faculty of Science.
- Other expenses include UEM charges of that will need to be adjusted in 2018.

Certification

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.



Anne-Laure Rijsema
Finance Director
Divisions of Natural Sciences, Engineering & Information Technologies and Business

2017 Balance Sheet

The University of Sydney
Uni of Syd Physics Foundation (L7500_SCI_FUND_PHYS)

Balance Sheet as at 31 December Calendar Year 2017

	Notes	31 December CY2017	31 December CY2016
ASSETS			
CURRENT ASSETS			
Cash		1,342	0
Short Term Funds		2,802,730	3,036,772
Total Current Assets		2,894,081	3,036,772
NON CURRENT ASSETS			
Medium/Long Term Investments	2	17,635,303	16,912,694
Total Non Current Assets		17,635,303	16,912,694
TOTAL ASSETS		20,529,384	19,949,466
LIABILITIES			
CURRENT LIABILITIES			
Payables		(27)	(27)
Total Current Liabilities		(27)	(27)
NON CURRENT LIABILITIES			
TOTAL LIABILITIES		(27)	(27)
NET ASSETS		20,529,410	19,949,493
EQUITY			
Accumulated Funds		20,529,410	19,949,493
TOTAL EQUITY		20,529,410	19,949,493

Notes to Financial Statements

1. Accounting Policies

- The financial statements have been prepared on a modified accrual accounting basis.
- All fixed assets are expensed in the year of purchase.
- Employee entitlements for Long Service Leave are held centrally in the University's accounts.
- The University (including the Foundations) is exempt from income tax.

2. The Short Term and Long Term Investments include \$5,401,039 of the Messel Endowment (\$5,445,643 in 2016) managed by the University of Sydney Physics Foundation to retain its value in accordance with the commitments made by the Foundation when the Endowment was established. The reduction in endowment is due to the use of prior year accumulated funds to support the 2017 International Science School (ISS) event.



University of Sydney Physics Foundation
School of Physics A28
The University of Sydney NSW 2006
sydney.edu.au/science/physics

CRICOS 0026A



THE UNIVERSITY OF
SYDNEY