



Australian
National
University



ANU CLIMATE CHANGE INSTITUTE
Annual Report 2016

CONTENTS

Overview	2
Vision and mission	4
People	5
Research highlights	6
Education highlights	8
Public policy highlights	10
Outreach	12
Awards	18
The year ahead – a message from the Director	20



OVERVIEW

The ANU Climate Change Institute connects climate change researchers and students throughout the ANU. Our role is to engage different audiences, including policy makers, media, other researchers, potential students, industry, NGOs and the wider community, with ANU climate research.

This report provides a small snapshot of the work on climate change being undertaken at ANU – it's designed to give readers an idea of the diversity and scope of climate activity, rather than to be a comprehensive record.

Engaging policy makers and the wider community with ANU climate research

VISION AND MISSION

Vision

The ANU Climate Change Institute's vision is to build and support a cohesive, interactive community of climate change-related researchers and teachers at the ANU.

Mission

Our mission is to contribute to climate change solutions through innovative, interdisciplinary approaches to research and teaching, drawing on the wealth of expertise across the University's seven colleges, and to connect our work with governments, the private sector and civil society.

Contributing to climate change solutions via innovative, interdisciplinary approaches to research and teaching.



Strategies

The strategies we use to achieve our mission are:

- > Building a collaborative community of climate change scholars across the University via seminars, symposia and other internal events
- > Developing research aimed at tackling critical climate change issues, through stimulating disciplinary work and enabling new interdisciplinary approaches, supported by significant new external funding
- > Working with academic areas to create and deliver exciting, innovative climate-oriented courses at undergraduate, post-graduate and professional levels
- > Providing policy-relevant advice to the Australian and ACT Governments and community and industry decision-makers supported by our expertise, our ongoing research, and our role as the national university
- > Communicating the activities and outcomes of the ANU climate change community to a wide range of audiences locally, nationally and internationally

Building and supporting a cohesive, interactive community of climate change-related researchers and teachers at the ANU

PEOPLE

CCI Membership

Membership of the CCI is open to any academic involved in climate research at ANU. As at 31 Dec 2016, the Institute included [156 researchers](#) from throughout the seven Colleges of the University, a 5% growth in membership since the start of 2016.

In late 2016, the CCI also started to recruit PhD students as Associate Members. 2017 will see a push to increase membership of both students and researchers from every corner of the University.

ANU academics and PhDs working on climate are invited to join CCI via our [website](#).

**156 researchers
from throughout
the university**

CCI Staff

[Professor Mark Howden](#) was appointed as permanent Director of the CCI in late 2015 and started in February 2016. Mark is also a Vice Chair of the Intergovernmental Panel on Climate Change Working Group II and an Honorary Professor at Melbourne University.

Other CCI staff include our Communications Manager, Clare de Castella (who is shared with the Energy Change Institute) and our Administrator, Margaret Prescott.

Two new roles will commence in 2017. [Dr Bec Colvin](#) will take up the role of Knowledge Exchange Specialist in January 2017 and the CCI will also be recruiting a Research Fellow addressing climate adaptation.

In 2017, [Ngaio Fitzpatrick](#) will start as the CCI artist-in-residence, extending her time with CCI from the Vice Chancellors College Visiting Art Fellows Scheme.



From left: Prof Mark Howden (Director), Clare de Castella (Communications Manager), Dr Bec Colvin (Knowledge Exchange Specialist), Margaret Prescott (Administrator). Photo: Clive Hilliker.

RESEARCH HIGHLIGHTS



The ANU provides leadership in climate change research across a [broad range of research themes](#). Research covers the science of climate change and its effects on our biophysical environment, and its impacts on society and societal responses from different perspectives including economic, legal, sociological and political.

The CCI brings together cutting edge climate research – from fundamental climate science and its effects on our biophysical environment, to societal, economic, political, legal and technological impacts and responses.

The following is a small sample (far from comprehensive) which demonstrates the breadth of climate change research by CCI members in 2016.

Climate Policy

[Dr Paul Burke's research paper on Australia's Direct Action subsidy scheme](#) concluded that the scheme is vulnerable to funding projects that would have happened anyway and made recommendations on future policy options, including pricing carbon emissions.

Climate and Oceans

[A/Prof Andy Hogg](#) was involved in [a study about how the circulation in the Southern Ocean is likely to respond to climate change](#). This showed that predicted increases in the “roaring forties” winds can modify flow in the Southern Ocean, having effects that are felt as far away as the North Atlantic Ocean.

Climate and Museums

[Professor Libby Robin](#) has been instrumental in developing the Collecting the Future project which is a partnership between the ANU and various national and international museums. It has used events, performance, objects and collections to explore the ways cultural institutions can support communities confronting climate change. The project has come together in a new book, [Curating the Future: Museums, Communities and Climate Change](#).



Climate change in the Pacific

[Stacy-ann Robinson](#)'s research with Daniel Gilfillan assessed [the effectiveness of regional organisations coordinating climate change adaptation efforts across small island developing states in the Caribbean and Pacific](#). It develops a special framework that these organisations can apply themselves. Along with Dr Matthew Dornan, she also analysed [international adaptation financing commitments to small island developing states between 2010 and 2014](#). Together they found that the allocation and sources of funding are highly skewed and that a country classified as a SIDS is likely to receive more funds than a non-SIDS country. They also found that governance quality is a determinant of financing to SIDS.

Climate Change Communication

[Liz Boulton](#)'s research provides a [transdisciplinary analysis of climate framing](#) and develops a 4-prong model for assessing a 'successful' frame. This is applied to analyse eco-philosophers Timothy Morton's 'Hyperobject' concept – which represents a challenging but also promising new way of understanding and communicating the meaning of climate change

Climate and Cities

[Honorary Professor Barbara Norman](#) is Director of [Canberra Urban and Regional Futures \(CURF\)](#). A major project this year was [Place-Based-Sustainable-Urban-Renewal](#): This interdisciplinary research project adopted a mixed method approach. Using Tuggeranong, ACT as a case study it found that the articulation of values and vision for places is central to the formation of place identity. [More on CURF's work, Strengthening Regional Resiliency – Canberra in the Region](#).

Climate extremes

[Dr Sophie Lewis](#) published two papers on [the communication of climate extremes](#), on understanding recent [temperature](#) and [rainfall](#) extremes in Australia, and on [future climate extremes](#). These can be seen on [The Conversation](#).

[Dr Nick Engerer](#)'s research focuses on using [solar forecasting and photovoltaic \(PV\) simulations](#) to remove the uncertainty around distributed PV performance and maximize the use of solar energy by networks.



Climate and Biodiversity

[Dr Alison Behie](#) was invited to contribute a chapter to the [International Encyclopaedia of Primatology](#) that summarises our existing knowledge on how cyclones and hurricanes have impacted primates globally. She also received a [DECRA fellowship](#) to study the impact of environmental disasters on primate behaviour and distribution. This project aims to study how environmental disasters affect distribution and behavioural adaptations and to predict effects of future disasters.

Climate and Health

[Dr Aparna Lal](#) wrote a [paper](#) reviewing the potential for spatial models to be used to better understand the spread of infectious diseases in the context of environmental change.

[Professor Robyn Lucas](#) co-authored a [paper](#) suggesting that ultraviolet radiation and sun exposure have a protective role in reducing the development of obesity and cardiometabolic dysfunction.

EDUCATION HIGHLIGHTS

Climate Change Courses at ANU

More than 50 climate related courses across ANU

ANU runs more than 50 [undergraduate](#) and [postgraduate](#) courses that address the multiple dimensions of climate change, from climate science to economics, law, policy and governance aspects of climate change vulnerability, adaptation and mitigation.

A couple of developments in 2016:

- > Dr Adrian C Hayes, School of Demography (in the Research School of Social Sciences, CASS) introduced a new graduate level course: [Population, Climate Change and Sustainable Development](#). This was conducted as a research-led course, focusing on a series of key questions designed to lead firstly to a basic understanding of how population dynamics contribute to the causes and consequences of anthropogenic climate change, and to society's capacity to respond, and secondly to developing the skill to ask new insightful questions about this topic.
- > [Professor John Evans](#) contributed a module to the course [Plants & Global Climate Change](#) focussing on short term responses of photosynthesis to atmospheric CO₂, translating enhanced photosynthesis into growth, feedback interactions between carbon, nitrogen and other nutrients, long term responses to rising CO₂.

Master of Climate Change

The [ANU Master of Climate Change](#) (MCLCH) program offers unique breadth and diversity in addressing the multiple dimensions of climate change - encompassing science, economics, law, policy and governance aspects of climate change vulnerability, adaptation and mitigation.

"The MCLCH program has broadened my understanding of the multiple dimensions of climate change and that's really helped me in my current role. It's different from other programs as it's uniquely inter-disciplinary and that's what really attracted me. It's also based on the latest scientific research and grounded in practitioner experiences."

Eryn Gayle de Leon is a MCLCH graduate who is now working as a Program Officer for the Philippine Program with the Global Green Growth Institute, headquartered in Seoul.



The Master of Climate Change program is uniquely interdisciplinary

Professional Short Courses

The CCI regularly runs short courses and briefings, designed to provide updates on climate science, and the social, policy, economic and governance aspects of climate change for policy makers and professionals. They can be tailored to meet the needs of a specific audience, and scheduled over consecutive days or spread over weeks.

For example in June 2016, the CCI delivered a comprehensive 2-day short course on “Climate Change and the Defence Environment” for the Department of Defence, which included sessions on climate science, biophysical impacts of climate change, societal responses to climate change, operational conditions under climate change, security implications of climate change, climate change and extreme weather and climate change adaptation.

Short courses on climate are ideal for government agencies who want to ensure their staff are up to date with the latest climate research

If you're interested in exploring options for short courses, please [contact us](#).



PUBLIC POLICY HIGHLIGHTS

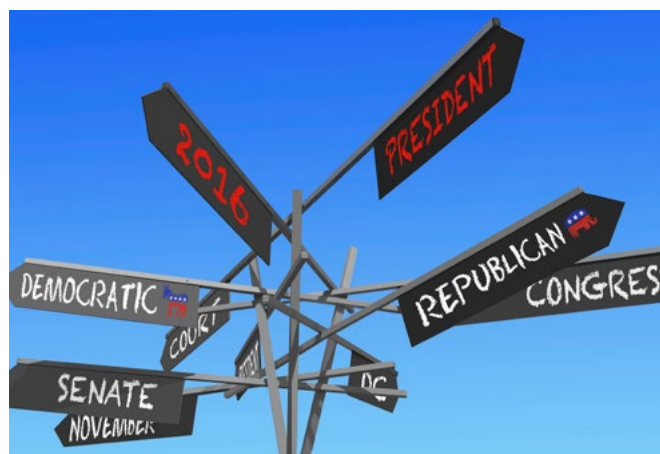
Below is a sample (far from comprehensive) of the public policy contributions CCI members have made in 2016:

CCI members are engaged with policy-makers at an international, national and state / territory level on an ongoing basis

International

- > Professor Mark Howden is Vice-Chair of [Intergovernmental Panel on Climate Change \(IPCC\) Working Group 2](#)
- > In 2016, Prof Mark Howden has also been on the following advisory panels in USA, Chile, the EU, and Asia including:
 - [APEC Climate Centre Science Advisory Committee](#) which advises member governments of APEC on climate issues
 - Strategic Advisory Council, [Center for Integrated Modeling of Sustainable Agriculture and Nutrition Security](#)
 - [The Lancet Obesity Commission](#) which addresses the large public policy issues of under-nutrition and over-nutrition
 - International Science Advisory Committee of the Chilean Centre for Climate Science and Resilience, which provides public policy advice on climate issues to governments in South America
 - Member of [INRA Science Advisory Board for the Adapting Agriculture and Forestry to Climate Change](#) Meta-Program which provides scientific input into public policy advice in France and the EU
 - Advisory Board of the [Climate Smart Agriculture programme of Climate-KIC](#) (CKIC) which is the EU's largest public private partnership in climate innovation

Prof Mark Howden is a Vice-Chair of the Intergovernmental Panel on Climate Change. Numerous other CCI members are also contributors to the IPCC



National

- > In November 2016, the CCI ran a number of parliamentary briefing sessions on Climate at Parliament House. These included a general briefing to all MPs and staffers, as well as private briefings with the Office of the Environment and Energy Minister, the Office of Minister for Industry Innovation and Science and the Shadow Minister for Climate Change and Energy. The delegation included [Prof Mark Howden](#), [Adjunct Prof Howard Bamsey](#), [Prof Frank Jotzo](#) and [Ret Admiral Chris Barrie](#).
- > In December 2016, Prof Mark Howden was appointed by Ministers Hunt and Frydenberg to the [National Climate Science Advisory Committee](#) to advise the Australian Government on a nationally aligned and integrated approach to climate science that addresses national business and policy development needs.
- > [Professor Frank Jotzo](#) led research and engagement with policy and business on low-carbon energy policy. A centrepiece was [research](#) on options to retire emissions intensive coal fired power stations. The research found [strong interest](#) in Australia's policy and business community. With the help of stakeholder consultations and public forums at ANU Crawford School, this helped start a new national discussion about exit mechanisms for old power plants.



ACT Government

- > Professor Frank Jotzo is a member of the [ACT Climate Change Council](#)
- > [Professor Penny D Sackett](#) was appointed to the [Business Advisory Board of ACT Renewable Energy Innovation Fund](#) formed to advise the government on investment opportunities that benefit the Territory and progress the uptake of renewable energy. She also serves as Deputy Chair of the [ACT Climate Change Council](#)
- > Prof Mark Howden has engaged with the [ACT Government Climate Adaptation and Mitigation Strategy](#).

OUTREACH

Events

In 2016 the CCI ran a program of public lectures and events attended by over 2,000 people. Audiences were diverse and engaged, consisting of a mix of students, researchers, government, policy makers, NGOs and the wider community.

- > 16 public lectures and seminars
- > Over 2,000 audience members

Public Lectures

[The Paris Climate Agreement in Perspective: A Student Forum](#)

10 March 2016. Attended by well over 200 people.

[A Global Perspective on the Signing of the Paris Climate Agreement](#)

21 April 2016. Timed to coincide with the signing of the Paris Agreement, this event was co-hosted by the EU Delegation to Australia, the US Embassy and the French Embassy. Booked out and attended by almost 500 people.



From left: Minister Cai Wei (Charge d'Affaires, Chinese Embassy in Australia), HE Mohamed Mael-Ainin (Ambassador of the Kingdom of Morocco), HE Sem Fabrizi (Ambassador, EU Delegation), HE Charles Lepani (Papua New Guinea High Commissioner), Dr Rhondda Dickson (Deputy Secretary, Department of the Environment), Laura Tingle (Australian Financial Review)

[US Climate Policy: What happens when Obama's gone?](#)

8 June 2016. Attended by 80 people.



From left: Elliott Diring (speaker at US Climate Policy: What happens when Obama's gone?) with panellists, Eliza Murray and Dr Luke Kemp.

[Climate adaptation in Australia: successes, failures and some lessons learnt](#)

14 June 2016. Professor Mark Howden. Attended by 180 people.

[The Vote: 2016 Federal Election Series - Climate Change, Energy and the Environment](#)

21 June 2016. Attended by 150 people with podcast downloaded by over 200 people.



From left: Mark Kenny, Lily Dempster, Dr Paul Burke, Professor Ken Baldwin, Professor Mark Howden. Image credit: Katharine Pierce, ANU.

EU Climate Diplomacy week: Innovation and the Economics of Climate Action

14 September 2016. Co-hosted with EU Delegation to Australia. Attended by over 100 people.



From left: Dr Alex Teytelboym (Oxford University), Liz Veitch (South East Region of Renewable Energy Excellence), Assoc Prof Kylie Catchpole, Helen Wilson (Domestic Emissions Reduction, Dept of Environment and Energy) and Prof Mark Howden.

A Postcard from Marrakech: Implementing the Paris Climate Agreement

22 November 2016. Co-hosted with EU Delegation to Australia. Attended by over 150 people.



Professor Mark Howden, H.E. Paul Maddison (High Commissioner of Canada to Australia), H.E. Paul Lepani (High Commissioner of Papua New Guinea to Australia) and Jo Evans (Deputy Secretary, Office of Climate Change and Renewables Innovation, Dept of Environment and Energy) at Postcard from Marrakesh

Can Humans Survive Human Nature? The Political Psychology of Climate Change

13 December 2016. Attended by over 140 people.

“Congratulations on a very interesting and well attended meeting.”

“... A really useful presentation. Thanks for the effort in putting the event together, and I look forward to joining you for climate events in 2017.”

“Thanks very much for all the organisation you put into the event. It was good to make connections with the rest of the panel, and the audience numbers certainly vastly exceeded my initial expectations!”

Climate Café Series

Climate Café is a monthly discussion group focussed on bringing people together to talk about different aspects of climate change. At each event, a guest is invited to present an idea, which is then explored in small groups. The aim is to be inclusive and overcome disciplinary barriers. The approach is modelled on dialogue events such as: Café Philosophic and Café Scientifique and is co-hosted by the [ANU Environment Collective](#).

Climate Café brings people together every month to discuss different aspects of climate change

[Climate Café: Climate Feedback - A Voice for Science in Climate Change Media Coverage](#)

21 March 2016, Daniel Nethery. Attended by 35 people.

[Climate Café: Why does Europe do climate diplomacy in Australia?](#)

29 April 2016, Caroline Lambert, EU Delegation to Australia. Attended by 40 people

[Climate Café: Why Do International Environmental Agreements Succeed or Fail?](#)

30 May 2016, Dr Luke Kemp. Attended by 30 people

[Climate Café: Soil Carbon - the silver bullet?](#)

25 July 2016, Helen King & Susie Orbach.
Attended by 50 people



Climate Café: Helen King presenting at Soil Carbon – the silver bullet?

[Climate Café: How Climate Change threatens our security](#)

29 August 2016, Ret Admiral Chris Barrie.
Attended by 80 people

[Climate Café: Art, Climate Change and Dangerous Ideas](#)

19 September 2016, Ngaio Fitzpatrick, CCI Artist in Residence. Attended by 60 people

[Climate Café: Climate Change - What You Can Do](#)

24 October, 2016, Anna Rose, Myers Fellow.
Attended by 50 people

[Climate Café: Transforming an Agricultural and Environmental Basketcase](#)

21 November 2016, John Ive. Attended by 70 people

Outreach by individual CCI members

Assoc Prof Geoff Cary worked with CCI staff to produce a display panel for the new [ANU Science Visitor Centre at Mount Stromlo](#) outlining how our changing climate will affect Canberra's future bushfires. In 2017, the CCI will be adding more panels explaining how increasing concentrations of atmospheric CO₂ are changing our climate.



In a future, warmer world, Canberra will likely become more of a Bushfire Capital with residents and their houses facing more frequent exposure to bushfires.

The Environment, Climate and Health Group presented and ran a booth on the Sun Exposure & Vitamin D Supplementation (SEDS) study at the [SciScouts event for National Science Week](#) with the Research School of Chemistry on 13 August 2016. We were visited by around 1100 cubs and scouts.

[Dr Sophie Lewis](#) ran a year-long program at O'Connor Cooperative School teaching weather, climate and science to their kindergarten class.

[Professor Robyn Lucas](#) attended the Royal Australasian College of Physicians conference, where there was a strong focus on Climate change and Health.

Media

Media coverage of fourteen Climate Change Institute commentators from 1 July – 31 December 2016 reached an audience of over 9 million people and included 158 media items.

A few examples of 2016 media coverage:

[It's official: 2015 was the hottest year ever recorded](#), The Conversation, Prof Janette Lindesay and Prof Mark Howden, 21 January 2016

[Election 2016: do we need to re-establish a department of climate change?](#), The Conversation, Dr Christian Downie and Adjunct Prof Howard Bamsey, 24 May 2016

[Can Malcolm Turnbull 2016 do climate and energy policy now?](#) The Conversation, Prof Frank Jotzo, 13 July 2016

[A Trump Presidency would spell disaster for the Paris climate agreement](#), The Conversation, Dr Luke Kemp, 18 August 2016

[Global warming started in 1830s](#), SMH / The Age, Peter Hannam featuring research and comment by [Assoc Prof Nerilie Abram](#), 25 August 2016. Lots of coverage of this research across range of media.

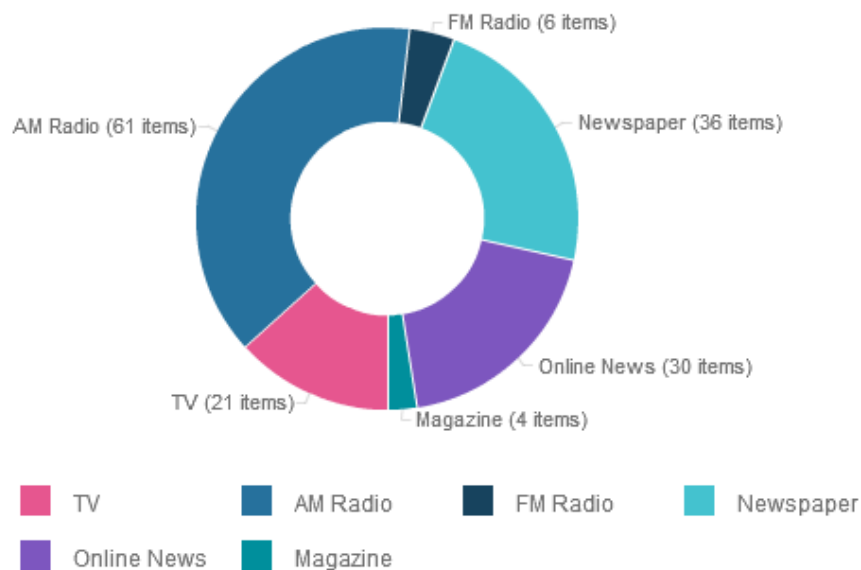
Interview with [Prof Janette Lindesay](#) about recent climate events, ABC Radio Canberra, 29 September 2016

Interview with [Prof Mark Howden](#) highlighting how close we are to 1.5°C increase in temperatures, The World Today, ABC Radio National & News Radio, 15 November 2016

[Climate Storm Shows Political Failure](#), The Australian Financial Review, [Professor Warwick McKibbin](#), 15 December 2016

Media coverage by just 14 CCI members reached over 9 million people for the second half of 2016

Media breakdown of coverage of 14 CCI commentators
1 July – 31 December 2016



Source: iSentia Mediaportal

Online engagement

Website

A new [CCI website](#) was launched in October 2015 and is attracting a growing number of visitors.

> 1000 web visitors per month

New CCI website launched Oct 2015 Monthly visitor numbers growing



- Data for July and August 2016 is incomplete (not captured from 14/7 to 22/8)
- Average session duration 2-3 minutes

Emarketing

The CCI sends out bi-monthly e-newsletters highlighting climate events and news. There's been a 65% growth in the database since December 2015, with over 3,000 subscribers, drawn from government, academia, students, industry and society in general. Newsletter open rates average between 30-40%.

**> 3192 email subscribers,
244 twitter followers**

Social media

The CCI's twitter account, @ANU_Climate, was launched in November 2015. The account currently has 244 followers, a growth of 215 followers in 2016.

The CCI Facebook account was launched November 2016. 2017 will see a push to increase social media followers.

AWARDS



A/Prof Dr Nerilie Abram

Vice-Chancellor's Award for Advancing the Reputation of the University through Media.



Prof Mark Howden

Prof Mark Howden was awarded the 2016 Vice Chancellor's Award for Public Policy and Outreach for commentary on the Federal Election



A/Prof Andy Hogg

2015 Priestley Medal from the Australian Meteorological and Oceanographic Society.



Prof Warwick McKibbin

Prof Warwick McKibbin was honoured with an Officer of Australia in the 2016 Australia Day Honours for distinguished service to education as an economist, particularly in the area of global climate policy.



Prof Robyn Lucas

Professor Robyn Lucas has been awarded the Tony Ayers Prize for Excellence in Research in Translational Medicine for her work on sun exposure, vitamin D and multiple sclerosis.



Prof Michael Raupach

Prof Michael Raupach, former Director of the Climate Change Institute, was honoured with an Officer of the Order of Australia (AO) on the Queens Birthday Honours list.



Dr Aparna Lal

Dr Aparna Lal was awarded a DFAT Partnerships for Development Fellowship. She visited the University of Yangon and started a research project looking at health outcomes in areas categorized by tropical cyclone risk.



Dr Ceridwen Fraser

Dr Ceridwen Fraser was named ACT Scientist of the Year.

THE YEAR AHEAD – A MESSAGE FROM THE DIRECTOR



As my first year as CCI Director draws to a close, one of my main priorities has been establishing the team.

I'm delighted to welcome our new Knowledge Exchange Specialist, Dr Bec Colvin, who started in January 2017, joining Clare de Castella (part-time Communications Manager) and Margaret Prescott (part time Admin Officer) and our cohort of amazing CCI members and honoraries. Bec will be using her social science skills and experience to build influential networks within ANU on climate issues and to extend the impact of these beyond the university. We're also in the midst of recruiting a new Research Fellow who will work with me on climate adaptation.

Looking backwards, 2016 was an extraordinary, record-breaking year, emphasising the critical importance of climate change research right across the spectrum from water resources to agriculture, energy to health and economics to global governance. The rapidity and severity of climate changes are becoming increasingly apparent as is the consequent importance of integrating climate into sustainable development right now.

2016 was an extraordinary year, emphasising the critical importance of climate change research right across the spectrum.

The CCI aims to enhance the ANU contribution to global climate research that contributes directly to social, economic and environmental outcomes. Over the next year we will be increasing our engagement both internally and externally, building stronger connections within ANU and engaging with policy makers and the wider community across a range of climate issues to develop impactful mitigation and adaptation options.

We look forward to working with you in 2017.

Professor Mark Howden, CCI Director

CONTACT US

ANU Climate Change Institute

Frank Fenner Building
141 Linnaeus Way
The Australian National University
Canberra, ACT, 2601

T + 61 2 6125 0633

E climate@anu.edu.au

W climate.anu.edu.au

 [ANU_Climate](https://twitter.com/ANU_Climate)

 [ANUClimate](https://www.facebook.com/ANUClimate)

CRICOS Provider #00120C