Great Research into Sustainability

Strategic Plan

2012 – 2017
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Our mission...

...to provide leadership in research and engagement with industry, government and communities to create integrated structural, technological and behavioural solutions for sustainably managed communities and natural environments.
1. Introduction

The Barbara Hardy Institute brings together world-leading researchers to work in multidisciplinary teams on real-world issues. We are scientists, engineers and social scientists whose work is underpinned by scientific rigor, technological expertise, industry connections and community engagement. We are driven by a shared vision: great research into sustainability.

The Barbara Hardy Institute is based within the Division of Information Technology, Engineering and Environment (ITEE) at the University of South Australia (UniSA). Our members are from across ITEE and other divisions of the university. Researchers at the institute are either research focussed or do both research and teaching (and are therefore aligned with a school: the primary teaching units of the university divisions). We are from a broad range of disciplinary backgrounds, including:

- Building and Construction
- Design and Manufacturing
- Impacts of Transport
- Mathematical Modelling
- Sustainable Agriculture
- Urban Ecology
- Citizen Science
- Geospatial Analysis
- Intelligent Transport Systems
- Urban and Regional Planning
- Sustainable Energy
- Zero Energy Housing
2. Our Patron: Dr Barbara Hardy AO

The mission, aims and goals of the Barbara Hardy Institute reflect those of its patron, Dr Barbara Hardy AO. Barbara is an inspirational advocate for the natural environment and sustainable living. Since the early 1970s, she has championed a multitude of environmental and educational initiatives. She has been a Commissioner of the Australian Heritage Commission, President of the National Parks Foundation of South Australia (now the Nature Foundation SA), Founding President of the Investigator Science and Technology Centre and Chairperson of the South Australian Landcare Committee among a number of other roles.

Barbara Hardy holds a science degree and two honorary doctorates. She was appointed an Officer of the General Division of the Order of Australia (AO) in 1987 and has received numerous awards, including: the Advance Australia Award 1991, SA Great Award 1992, Institution of Engineers Medal 1992, ABC Eureka Award for the Advancement of Science 1994 and was named South Australian Citizen of the Year in 1996. She is now a Companion of the Institution of Engineers Australia and a Fellow of the Australian Institute of Energy.

Barbara has a long and valued association with the University of South Australia. She was a founding board member of the Institute for Sustainable Systems and Technology from 2006 to 2009 and in 2009 became patron of UniSA’s Centre for Sustainable Urban Environments: The Barbara Hardy Centre. In 2011, Barbara became patron of the Barbara Hardy Institute. Through our research, the institute champions her vision for the ‘widespread adoption of sustainable principles and environmentally correct practices’.
3. Our Objectives 2012-2017

- To provide integrated research solutions related to sustainable communities and environments
- To develop and maintain partnerships with key organisations driving the quality and implementation of our research
- To conduct internationally significant research that contributes to creating economically, socially and environmentally sustainable human settlements
- To nurture and attract world class researchers to expand the scale and focus of our research

4. Our Research Approach and Strategic Foci

We take a project-driven approach to conducting and delivering research into sustainability. Accordingly, researchers themselves determine and take responsibility for our projects. By opening up the institute around the very broad topic of ‘sustainability’ we can welcome all good researchers with an interest in the area and support quality research on any topic within the theme. It also encourages the natural formation of teams around the interests and opportunities discovered by the members. This, in turn, allows for initiative and the demonstration of leadership.

<table>
<thead>
<tr>
<th>Our Strategic Foci</th>
<th>Key Drivers of Growth</th>
<th>Core Strategies</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Building on our firm foundation of existing research to grow our success in research income and outputs, in terms of scale, focus, quality and quantity</td>
<td>Research Strategy</td>
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<td></td>
<td>Developing external strategic partnerships that create demand for integrated research solutions</td>
<td>Partnerships Strategy</td>
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<td>Growing our human resource capability and capacity through research training, professional development and recruitment</td>
<td>Human Resource Strategy</td>
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<td></td>
<td>Growing our profile and image in academia, government, industry and the wider community</td>
<td>Marketing and Communications Strategy</td>
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<td></td>
<td>Developing our organisation to support research and demonstrate the strength of our multidisciplinarity</td>
<td>Organisation Strategy</td>
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5. Our Strategies and Goals

5.1 Research Strategy

Our research strategy has been formulated to develop research strengths in alignment with university and research community priorities, most importantly:

1. The Australian Research Council’s (ARC) review of research in Australian higher education institutions, the Excellence in Research in Australia initiative (ERA); and
2. UniSA’s research concentrations strategy (ReNEW), which guides the development of research concentrations to focus research strengths and support researchers.

<table>
<thead>
<tr>
<th>Goals</th>
<th>Measures</th>
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<tbody>
<tr>
<td>Organise research projects into three tiers based on scale and focus, headed by Icon Projects as exemplars of multidisciplinary excellence (see section 6.2: A Three-Tier Approach to Projects)</td>
<td>• Growth in membership</td>
</tr>
<tr>
<td>Create a Contract Research and Consultancy Unit to manage and support consultancy work, including testing, evaluation and technical services (see section 6.1.2: Contract Research and Consultancy)</td>
<td>• Growth in research income</td>
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<tr>
<td>Establish programs to support growth in research income and research outputs (see section 6.3: Foundation Programs)</td>
<td>• Growth in research outputs</td>
</tr>
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<td></td>
<td>• Streamlined administration of contract research and consultancy work</td>
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5.2 **Partnerships Strategy**

Our partnerships strategy has been formulated to develop long-term, strategic partnerships with governments and industry, locally, nationally and internationally.

<table>
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<tr>
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<tbody>
<tr>
<td>Establish partnerships based on formal and informal agreements that will create demand for integrated solutions</td>
<td>Increased engagement with research partners in all tiers of research leading to increased funding opportunities</td>
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<tr>
<td>Maximise our involvement in government programs and other fora in the broad area of sustainability</td>
<td>Increased representation in government and industry activities</td>
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<tr>
<td>Maximise the use and expertise of our Advisory Board</td>
<td>Activity and high-calibre membership of the Advisory Board</td>
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5.3 **Human Resources Strategy**

Our Human Resources Strategy has been formulated to develop and recruit personnel for excellence.

<table>
<thead>
<tr>
<th>Goals</th>
<th>Measures</th>
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<tbody>
<tr>
<td>Engage with our partner schools in joint recruitment of outstanding researchers at all levels</td>
<td>Increasing membership of full and affiliate members (10% per year) and increased productivity of our membership (income and research outputs) each year. Strategic initiatives that will underpin achievement of these goals are outlined in section 6</td>
</tr>
<tr>
<td>Develop internal programs to encourage quality research outputs</td>
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<tr>
<td>Create research opportunities for high-performing members, both new and existing</td>
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<tr>
<td>Identify, obtain and maintain resources and facilities required to attract senior researchers</td>
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5.4 **Marketing and Communications Strategy**

Our Marketing and Communications Strategy has been developed to build the internal and external profile of our institute.

<table>
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<tr>
<th>Goals</th>
<th>Measures</th>
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<tbody>
<tr>
<td>Develop and implement a comprehensive brand development strategy</td>
<td>Increased media and website activity, community activity, book sales, awards received by members, development of marketing material</td>
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<td>Develop a focused community outreach plan</td>
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5.5 **Organisation Strategy**

Our Organisation Strategy has been developed to streamline the organisation to support growth in research.

<table>
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<tr>
<th>Goals</th>
<th>Measures</th>
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<tbody>
<tr>
<td>Establishment of Foundation Programs</td>
<td>Increases in membership and research income and outputs. Each Foundation Program will have detailed performance indicators</td>
</tr>
<tr>
<td>Re-organisation of the administration team (see section 6.1.1)</td>
<td>Streamline administration</td>
</tr>
<tr>
<td>Work collaboratively with schools to build the research profile of the university and develop the teaching-research nexus</td>
<td>Strategic growth of membership and management of research students</td>
</tr>
<tr>
<td>Develop a Contract Research and Consultancy Unit</td>
<td>Streamline administration (see section 6.1.2: Contract Research and Consultancy)</td>
</tr>
<tr>
<td>Sound fiscal management</td>
<td>Growth in research income; management of finances to meet budgetary expectations of the division</td>
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6. Key Strategic Initiatives

6.1 Structure of the Institute

The structure of the institute was established in 2011 to streamline management and administration and to facilitate the delivery of Foundation Programs and the commencement of Icon Projects (Figure 1).

Figure 1. Organisational structure of the institute.
6.1.1 Membership

Academic members are classified into three categories (according to the UniSA research concentration development strategy ReNEW). Accordingly, our membership is:

- **Full members:**
  - Academics at UniSA who contribute at least 30% of their workload to research at the institute and have produced at least five research outputs in the last three years;
  - Early Career Researchers (ECRs); and
  - Research-only staff employed by the institute.

- **Associate members:**
  - Members of other research concentrations who contribute to research at the Barbara Hardy Institute; and
  - Researchers who do not produce enough research outputs to be considered a full member.

- **Affiliate members:**
  - Adjunct UniSA researchers aligned with the institute; and
  - External members who work in areas of direct relevance for the research concentration.

In addition, the institute has:

- **Research students** (higher degrees by research, e.g. PhD or Masters by Research);
- **Professional and research support staff**; and
- **Administration staff** (the administration team operate as a team, performing necessary administrative duties and providing support for Foundation Programs, Icon Projects, and other cross-institute activities).

6.1.2 Contract Research and Consultancy

The Barbara Hardy Institute runs extensive and sought-after technical and advisory services for government and industry. A significant amount (about 33%) of our research activities and 22% of our income are devoted to contract research, consulting, testing and evaluation. In 2011 we began the process of developing a **Contract Research and Consultancy Unit** to streamline the administration of this work.
6.2 A Three-Tier Approach to Projects

The breadth of individual topics and opportunities in sustainability are enormous. We cannot hope to tackle them all, but we can:

- **Do what we do well — and always strive to do it better;**
- **Link the projects and topics within the institute and with our partners;**
- **Identify opportunities for collaboration around methodologies and approaches within the institute and with our partners; and**
- **Identify where we should be directing our future research efforts.**

To achieve these ends we must view research projects in terms of their scale and focus. A three-tiered hierarchical model will be used to develop the research profile of the institute (Figure 2). Projects are allocated to tier 1, 2 or 3 with consideration of scale and focus in addition to traditional measures of research such as quality and quantity. The institute will also actively encourage good projects to grow from tier-3 to tier-1.

![Figure 2. A three-tier approach to research projects.](image)
6.2.1 Tier 1: Icon Projects led by Champions

Icon projects will be inclusive, large-scale and have significant impact. Projects will be merit selected by the Executive. Icon Projects will be led by the best researchers in the institute. They will be developed with performance indicators, against criteria including:

1. Multidisciplinarity or transdisciplinarity;
2. Building partnerships;
3. External funding;
4. Engaging many Barbara Hardy Institute researchers;
5. Multiple research outputs;
6. Industry and community engagement;
7. Industry and community profile;
8. Scale, focus and impact; and
9. Quality and quantity of research.

6.2.2 Tier 2: Key Researchers leading Focused Research Projects

Tier-2 research projects are the mainstay of university research and have the following characteristics:

1. Usually the research of our senior members (Assoc Prof/Prof);
2. Well funded – usually category 1 grant funded research (nationally competitive grants), or a significant component of a CRC;
3. Focussed on a specific topic or area;
4. Undertaken by a small group or an individual with external partners;
5. Produce many quality research outputs (e.g. research papers/products/symposia);
6. Produce quality research students and support junior research fellows; and
7. May be part of an ongoing research program that lasts for many years.

6.2.3 Tier 3: Small-Scale, Pilot or Student Research

Tier-3 research is small-scale research, including contract research, consultancies and testing or evaluation services. It has the following characteristics:

1. Small-scale;
2. Produces a limited number of publications;
3. Mostly funded by category 2 (public sector grants) and 3 (industry and international research income) income;
4. Includes pilot and non-core research;
5. Can have significant impact as individual pieces of research;
6. Often only lasts for a short period (a year); and
7. May lead to tier-2 projects.
6.3 Foundation Programs

The Barbara Hardy Institute is managed by an Executive group chaired by the Institute Director. The Executive has permanent members with defined responsibilities and also includes the champions of institute Icon Projects. The Executive represent and champion the Barbara Hardy Institute both internally and externally. The roles of the Executive are to:

- Co-ordinate and manage the strategic and operational plans of the institute;
- Undertake a specific role within the institute:
  - Liaise with a specific school to promote the teaching-research nexus; and/or
  - Take responsibility for the conduct of a specific Foundation Program.

### Foundation Programs

<table>
<thead>
<tr>
<th>Program</th>
<th>Key Roles</th>
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<tbody>
<tr>
<td>Category 1 and 4 funding development</td>
<td>Support researchers to develop grant-winning ability and in preparing applications, thereby increasing research funding, particularly in nationally competitive grants (Category 1 grants) and through Cooperative Research Centres (Category 4 grants)</td>
</tr>
<tr>
<td>Early career and associate researcher development</td>
<td>Support early and mid-career researchers to develop research skills and increase their research performance</td>
</tr>
<tr>
<td>Fellowships and internationalisation</td>
<td>Increase opportunities for international collaborations and attracting research fellows</td>
</tr>
<tr>
<td>Teaching-research nexus and attracting research students</td>
<td>Support research students and their supervisors to increase research performance and student completion rates</td>
</tr>
<tr>
<td>Public profile</td>
<td>Develop and grow the reputation of the institute amongst stakeholders: government, industry, community and peers</td>
</tr>
<tr>
<td>Facilities and infrastructure</td>
<td>Develop and champion plans for improvements to research infrastructure</td>
</tr>
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### Additional Executive responsibilities

<table>
<thead>
<tr>
<th>Program</th>
<th>Key Roles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institute Director</td>
<td>Strategic planning and management of the institute</td>
</tr>
<tr>
<td>Institute Manager</td>
<td>Daily operation of the institute and overall management of the administration team</td>
</tr>
<tr>
<td>Icon Project Champions</td>
<td>Development and delivery of Icon Projects</td>
</tr>
<tr>
<td>School liaison, School of Natural and Built Environments</td>
<td>Liaison with schools to develop synergies and build the research profile of the university</td>
</tr>
</tbody>
</table>
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