



Environment Institute

# Australian Bioactive Compounds Centre



THE UNIVERSITY  
of ADELAIDE



University of  
South Australia



# Australian Bioactive Compounds Centre

The Australian Bioactive Compounds Centre has recently been established between the University of Adelaide and the University of South Australia. Our aims are to: 1) apply ecological and Indigenous knowledge to identify biologically active compounds from native plants, particularly from the arid zone; and 2) fast-track these into commercially useful products in areas including medicine and agriculture.

**Our unique competitive advantage is that we can combine our knowledge of arid zone plant biology and ecology, with indigenous knowledge and our experience in screening for bioactive compounds, our capabilities in chemistry for purification, synthesis and manufacture and our understanding of existing gaps in the markets for new and novel compounds in medicine and agriculture.**

Many currently available pharmaceuticals are derived from bioactive plant chemicals that serve a variety of ecological roles. An ecological understanding of these phenomena can help target drug discovery to plants and compounds that are more likely to prove pharmacologically useful.

We are focusing our research on arid zone plant families from Outback Australia. These plant groups are not the focus of any other research group, yet they are known to be highly prospective for bioactive materials because of the harsh environment that they live in. The Centre has already started sample collection and product screening, and a product is already close to market commercialisation.

**A point of difference is our approach to working with Indigenous Traditional Owners and local communities on traditional medicines and native plant species.**

We have a commitment to negotiating formal agreements with the custodians of traditional lands:

- > that encompasses gaining relevant permissions to collect plant species,
- > facilitate fair and equitable benefit-sharing arrangements arising from the utilisation of their natural resources and intellectual property,
- > as well as inviting traditional owners to work and participate in the research.

The holders of traditional knowledge are invited to contribute their understanding about plant cycles, herbivore-plant associations and other know-how that could lead to commercially valuable products.

**We have the expertise and knowledge to find bioactive compounds and develop products in particular niche areas.**

**Functional foods:** develop high-end and value-added food products that have a positive effect on health beyond basic nutrition using South Australian native plants.

**Pharmaceuticals:** develop new compounds to combat major diseases such as cancer, bacterial and fungal infections and inflammation. Finding novel pharmaceutical compounds is vital in the face of multi-drug resistant bacteria and fungal infections.

**Animal and veterinary:** Antibiotics, anti-parasitic, anti-cancer compounds and other animal health products constitute a major proportion of global market demand.

**Agrichemicals:** using plant-based compounds as natural herbicides and pesticides. The demand for organic food globally is greater than supply—partly due to a lack of acceptable organic plant protection compounds.

**We are looking for partners to work with us to commercialise novel bio-active compounds.**

If you are a traditional holder of knowledge, a researcher with complementary skills, investor, producer/marketer of pharmaceuticals, nutraceuticals or agrichemicals, we are seeking to build a team of collaborators to fast-track and commercialise plant bio-active compounds from Outback Australia.

**If you believe that you can add value to our Centre, please contact Professor Phil Weinstein, Co-Director of the Australian Bioactive Compounds Centre on +61 8 8313 5328 or [philip.weinstein@adelaide.edu.au](mailto:philip.weinstein@adelaide.edu.au)**

**[www.bioactivecompounds.org](http://www.bioactivecompounds.org)**

“ We strongly believe in the value of protecting our environment and the significant role that nature has in revealing innovative solutions to the grand challenges that society faces.”



**Our centre hosts a unique group of scientific experts across diverse research disciplines that are at or above world standards in research capability.**

| Scientific Experts                                | Expertise and experience   |
|---|--|
| <b>Botany, ecology and entomology</b>             |  |
| Professor Phil Weinstein (Co-director)            | Entomologist, and leadership of multi-disciplinary research collaborations   |
| Professor Andrew Lowe                             | Plant biologist, molecular-based monitoring of biodiversity                  |
| Professor Michelle Waycott                        | Botanist, adaptation and survival of plants in extreme environments          |
| Dr John Conran                                    | Plant evolutionary biologist, molecular response of plants to climate change |
| Dr Kate Delaporte                                 | Propagation and cultivation of new native plant varieties                    |
| Ben Sparrow                                       | Ecologist, collection and monitoring of arid zone plant communities          |
| Casey Hall  | Plant-insect interactions and plant chemical ecology                         |
| <b>Compound identification and drug discovery</b> |  |
| Dr Susan Semple                                   | Pharmacist, partnerships with Australian Aboriginal communities              |
| Dr Brad Simpson                                   | Chemist, pharmacological investigation of Indigenous traditional medicines   |
| Professor Tony Carroll                            | Natural products drug discovery and compound isolation                       |
| Professor Simon Pyke                              | Chemist, synthesis and interaction of bioactive molecules with proteins      |
| <b>Compound screening and development</b>         |  |
| Professor Bob Milne (Co-director)                 | Drug discovery, pharmacokinetics and metabolism of drugs                     |
| Professor Grant Booker                            | Biochemist, understanding protein structure and function                     |
| Professor Jason White                             | Pharmacologist, pharmaceutical development and clinical trials               |
| Associate Professor Darren Trott                  | Microbiologist, research in antimicrobial resistance                         |
| Dr Rietie Venter                                  | Microbiologist, developing new drugs to target antimicrobial resistance      |
| <b>Compound synthesis and manufacture</b>         |  |
| Professor Birger Møller                           | Biochemist, elucidating biosynthetic pathways of bioactive plant products    |
| Professor Vincent Bulone                          | Biochemist, plant cell wall structure and metabolism                         |
| <b>Commercial development</b>                     |  |
| Paul Dalby  | Business development consultant  |

# www.bioactivecompounds.org

## For further enquiries



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