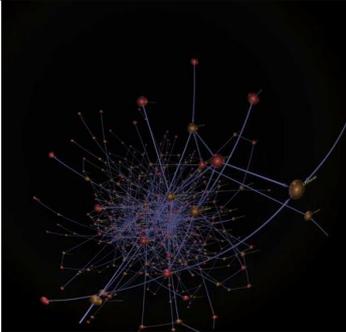
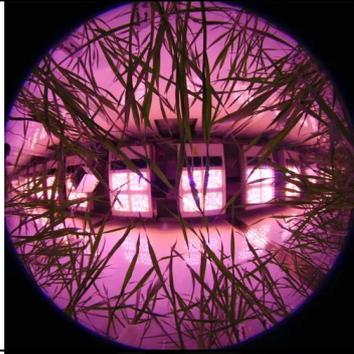


Scene	Timing	Dialogue
<p>Static screen – to display prior to movie</p> <p>TEXT: Did you know that the world’s plants capture six times more energy than humans use?! Wouldn’t it be great if we could make better use of this energy!</p> <p>The Australian Research Council Centre of Excellence in Plant Energy Biology is an Australian research Centre fascinated with the energy systems of plants! Come on an immersive journey through some of Plant Energy Biology’s exciting science. Explore the insides of our laboratories and the insides of plant cells! Spend some time with our researchers as they address your questions about the research being done here in Australia.</p> <p>Plants are our food and fuel future. The Centre is keen to empower our community with a better understanding of the power of plants and the benefits of plant energy biology research , and to do so in fun and engaging ways...such as using a giant, domed screen!</p>		
	<p>Labels start to appear.</p> <p>....plays for a little longer after dialogue trails off.</p>	<p>The planetarium. A space for presenting entertaining and educational shows about astronomy and the night sky. For taking viewers on a journey through distant galaxies. But....why not use it to look at something a little closer to home.</p> <p>Why not use it to take you on a journey through the complex and fascinating worlds that exist...inside of the plants you see everyday!</p>
	<p>Animation sequence....</p> <p>Ends with final logo.</p>	<p>Welcome, to the Plantarium!</p>
		<p>Plants are our food and fuel. Plant Energy Biology would like to showcase some of their exciting research to better understanding the energy systems of plants and their responses to harsh and changing environments. The Centre’s main headquarters is the spectacular Bayliss Building, at the University of Western Australia. Other Centre researchers perform their research throughout Australia and around the world.</p>



Plants are really clever. They source their energy from the sun, and they use this energy to generate what we use for food. For fuel. For fibre to make our clothes. One of the most significant challenges of the next 50 years will be food and fuel for our world's increasing population. Did you know that by the year 2050 the global population is expected to exceed 9 billion?

Food and fuel production will need to increase an estimated 70% to meet demands. At the same time, once fertile lands are becoming increasingly dry, salty, and less suitable for agriculture. But remember I said that the world's plants capture six times more energy than humans use?! In the face of increasing world population and limited agricultural land wouldn't it be great if we could make better use of the potential of plants?

To do this requires an understanding of plant energy systems.

The research to understand plant energy takes us on fascinating journeys deep inside plant cells.

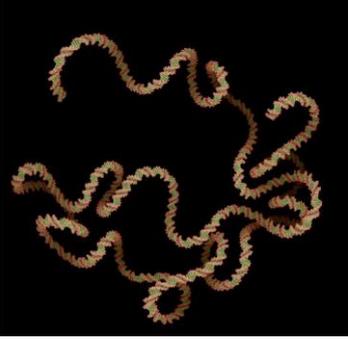
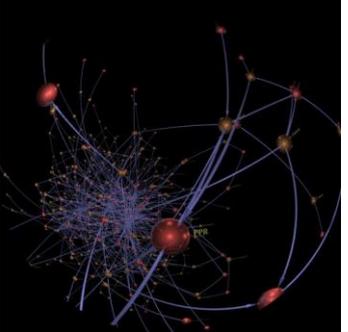
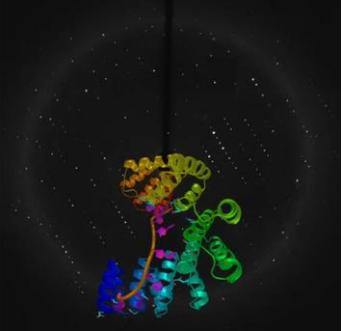
Plant cells are special, they can manufacture their own chemical energy from the sun. They literally harness the starlight! So maybe a planetarium and our plantarium isn't so different after all?

Housed within protective cell walls, tiny subunits, called organelles, work away to create, convert and use the energy that keeps a plant functioning.

The mitochondria is the powerhouse of a plant cell – it uses sugar and oxygen to produce energy.

The Golgi complex is like a highway, it distributes the proteins and other molecules made across the cell.

The chloroplast does the tricky stuff- photosynthesis. Sunlight is used to convert water and carbon dioxide into sugars and oxygen – the first step towards producing energy for a plant.

		<p>And the nucleuse, home to a plant's DNA.</p>
		<p>DNA is the stuff of life. Meters and meters of the cell blueprints sit within a plant cell nucleus in what seems like a tangled mess. But in fact, this DNA is the teeming library of instructions needed to produce the building blocks which make up a plant. These building blocks, the proteins, form the machinery inside a cell, as well as much of a plant's structure.</p> <p>The basic form of DNA is the well known double helix and its shared among all living things. But it's the sequence of information within the DNA that differs. Within the DNA are regions called genes. Did you know that all plants contain 10,000s of genes?</p> <p>While we are very different from plants, we actually have many genes that are very similar to theirs.</p>
		<p>Inside a plant cell, complex interactions occur between different molecules, including the DNA, RNA, proteins and metabolites. These complex networks of interaction influence everything that a plant cell does. Each line is an interaction that could change what a plant does or how it grows.</p>
		<p>We can study molecular interactions and determine how the machinery inside plant cells actually works.</p> <p>Proteins that bind RNA are really interesting. They influence how and when a cell can use certain information. But this knowledge can also be used to improve plants. For example the ability to make sterile plants fertile again using these proteins allows the breeding of better crop plants.</p>



Over one hundred researchers at the Centre of Excellence in Plant Energy Biology perform their work around Australia. They come from different backgrounds and many ages, but all love plants and science!

Work is performed in Perth, Adelaide, Canberra and Melbourne, in laboratories, on computers, in plant growth facilities, greenhouses, and out in the field.

To answer important research questions we can employ many exciting technologies, including mass spectrometry, gigapixel imaging and even quadcopters!

Plants are our food and fuel future. If we can enhance plant energy efficiency we can maximise our use of the power of plants and enhance our shared future!