

A smart green future

**Declan Graham, Plant and Food Research
Auckland New Zealand**



About us



Incorporated December 2008

- Based in New Zealand
- Government-owned Crown Research Institute
- Revenue NZ\$184 million (2021/22)
- Legacy extends back to 1926

More than 900 employees

- 700+ research staff
- 14 sites in New Zealand
- Representatives in the USA, Australia

Income

- 66% private contracts and royalties
- Strong Royalty Investment Programme
- 34% New Zealand Government contracts



Our research



Future plants,
fish and foods



Sustainable
resilient food
supply



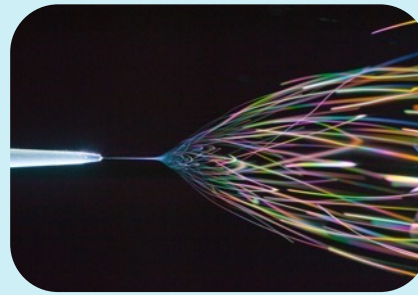
Blue skies
science for
Growing
Futures™



Our capabilities



Sustainable
resilient food
supply



Total utilisation



Crop optimisation



Sensing
technology



Food safety



Biosecurity and
crop protection



Soil, water and
climate



Supply chain
optimisation



Conservation and
ecology



Seafood production

Our capabilities



Future plants,
fish and foods



New plant cultivars



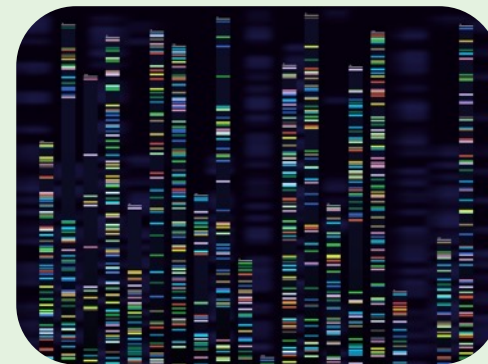
New breeding
approaches



Consumer &
stakeholder research



Food & ingredient
formulation



Genetics & genomics
– markers for
commercial traits



Health & nutrition

New Cultivar Innovation



Strategy

- New cultivars with identified consumer and producer traits
- Identified molecular mechanisms controlling key traits
- Breeding programmes using integrated genomics tools

Main research themes

- Identifying molecular mechanisms controlling key traits
- Developing molecular markers for key traits
- Genotyping and phenotyping of germplasm collections
- Developing new technologies to support breeding programmes
- Breeding of new cultivars with defined commercial traits





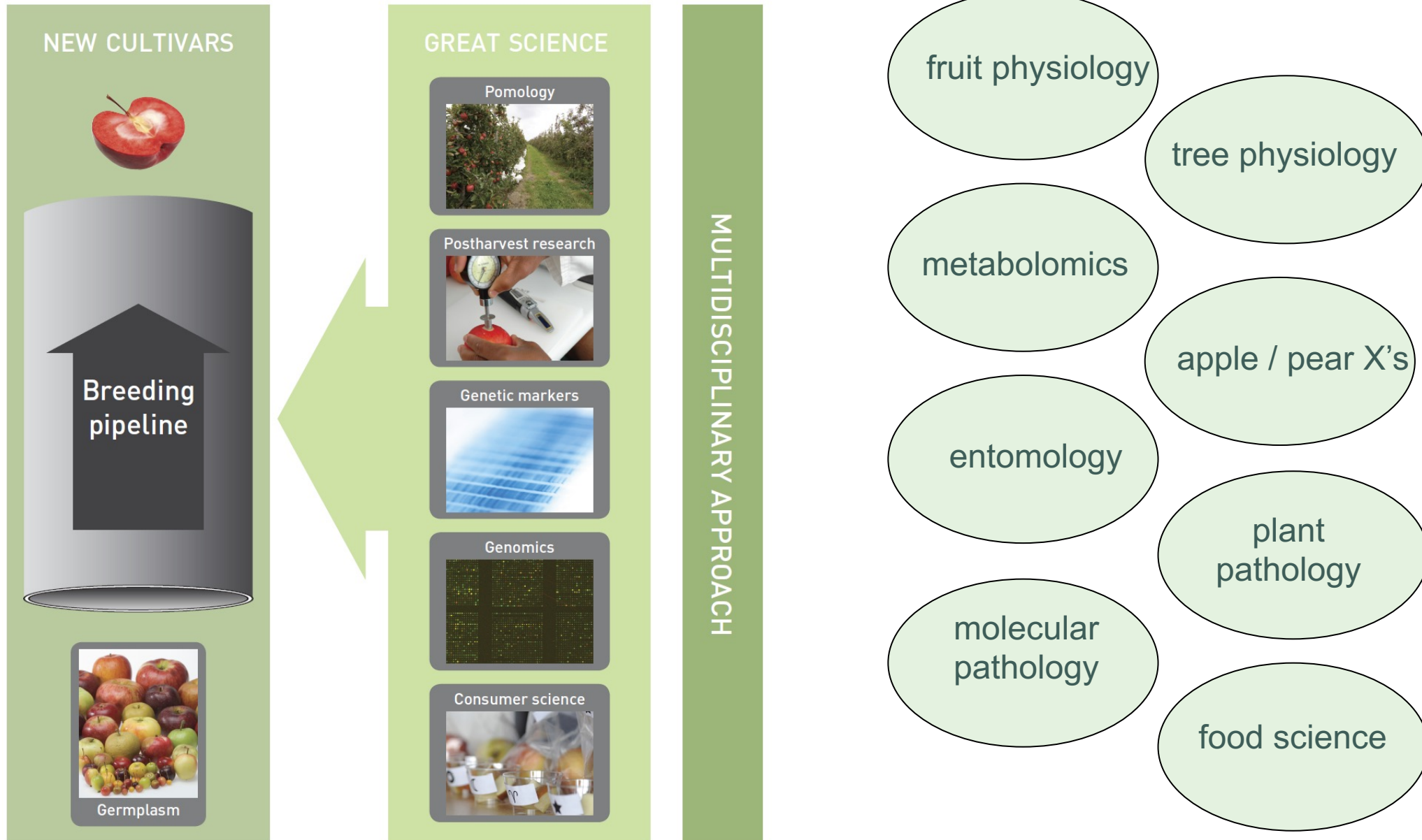
Bonfire begonias. Nectaron® hop.
Zespri SunGold® kiwifruit. JAZZ™
apple. Everleaf Tiger oat. PACIFIC
ROSE™ apple. Nzsummer2 apricot.
Tahi kiwiberry. Blue Sapphire™
blueberry. Vanguish wheat. Firefly
Kale. Red Rascal potato. Blushing
Star. Tango™
tamarillo. Summer Blaze peaches.
Raspberry. Shortcake ornamental
raspberry. Pinnacle pea. Blackadder
blackcurrant. CleanCrop™ Palaton.

**Our cultivars are
grown in more than
30 countries worldwide**

- Zespri™ Red Kiwifruit
- Wake® raspberries
- Envy™ apples
- ‘Moonlight’ potatoes
- ‘Conquest’ wheat



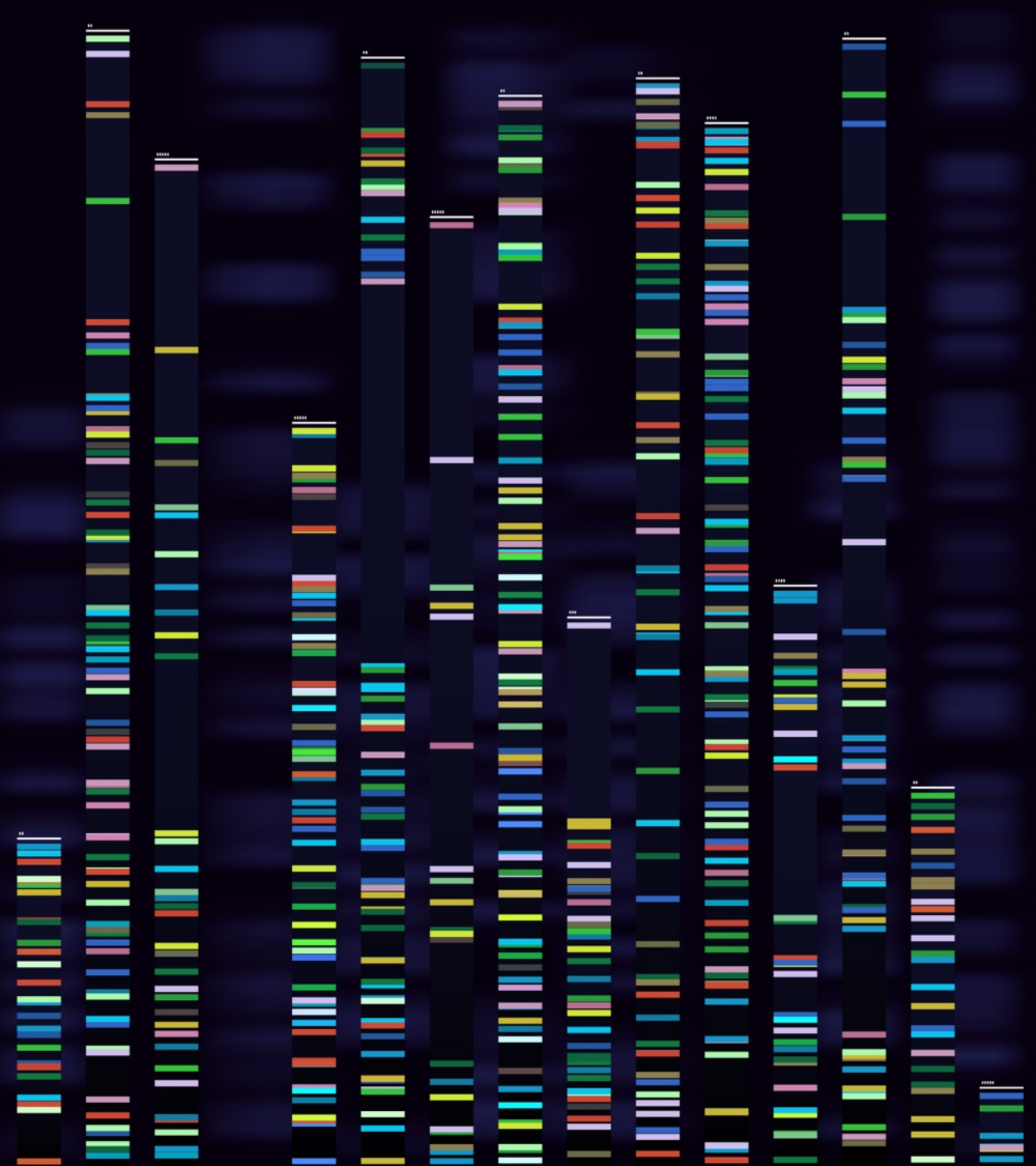
Apple breeding science framework



Marker-assisted selection in apples to deliver better cultivars faster

Nutrition, consumer appeal, pest and stress tolerances

- Gene identification, sequencing and mapping
- Gene function and pathway analysis
- Marker-assisted and whole-genome selection
 - Apple scab resistance (*Rvi2*, *Rvi6*)
 - Powdery mildew resistance (*PI2*)
 - Flesh colour
 - Skin colour
 - Cross compatibility
- Future ...
 - Coreless apple, self thinning,, satiety, novel flavours, vitamin C & polyphenols



Elite apple selections

