Good Practice Framework for Research Training in Australia

Steering us in the right direction towards research training quality

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Dean, GRS
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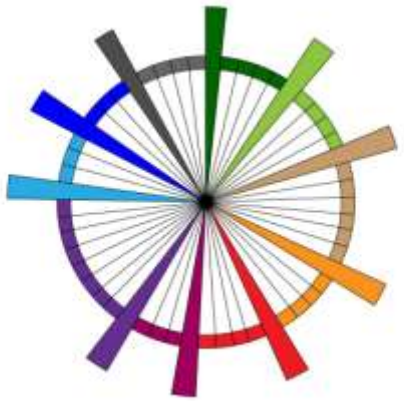
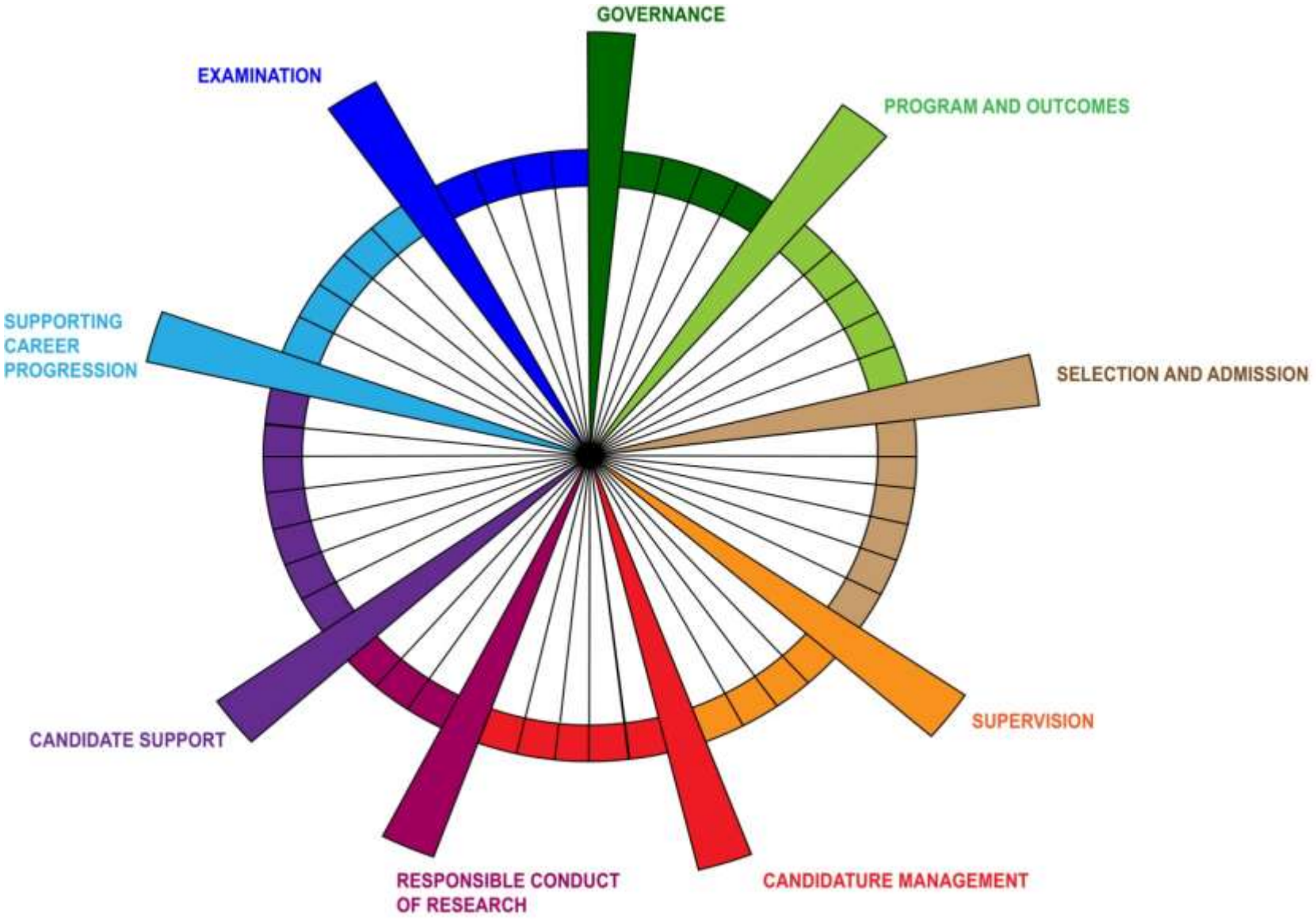


Acknowledgements:
- Deans and Directors of Graduate Schools
- Nigel Palmer & Dr Sara Booth
- Office of Learning & Teaching

Overview

1. Introduction
2. National Context
3. The Good Practice Framework
   - GPF Gap Analysis & Benchmarking
4. Institutional Considerations
5. Conclusion
6. Q&A

1. Introduction



South Australia Wines

- The South Australian wine industry is responsible for more than half the production of all Australian wines
  - Penfolds
  - Jacob's Creek
  - Seppeltsfield
  - Chaplin Hill
  - Etc..

Wine Industry

- Stakeholders include:
  - Consumers
  - Producers
  - Judges
  - Retailers
- Wine Quality?
  - Appearance 3/20
  - Nose 7/20
  - Palate 10/20
  - Balance?

Who is the judge?

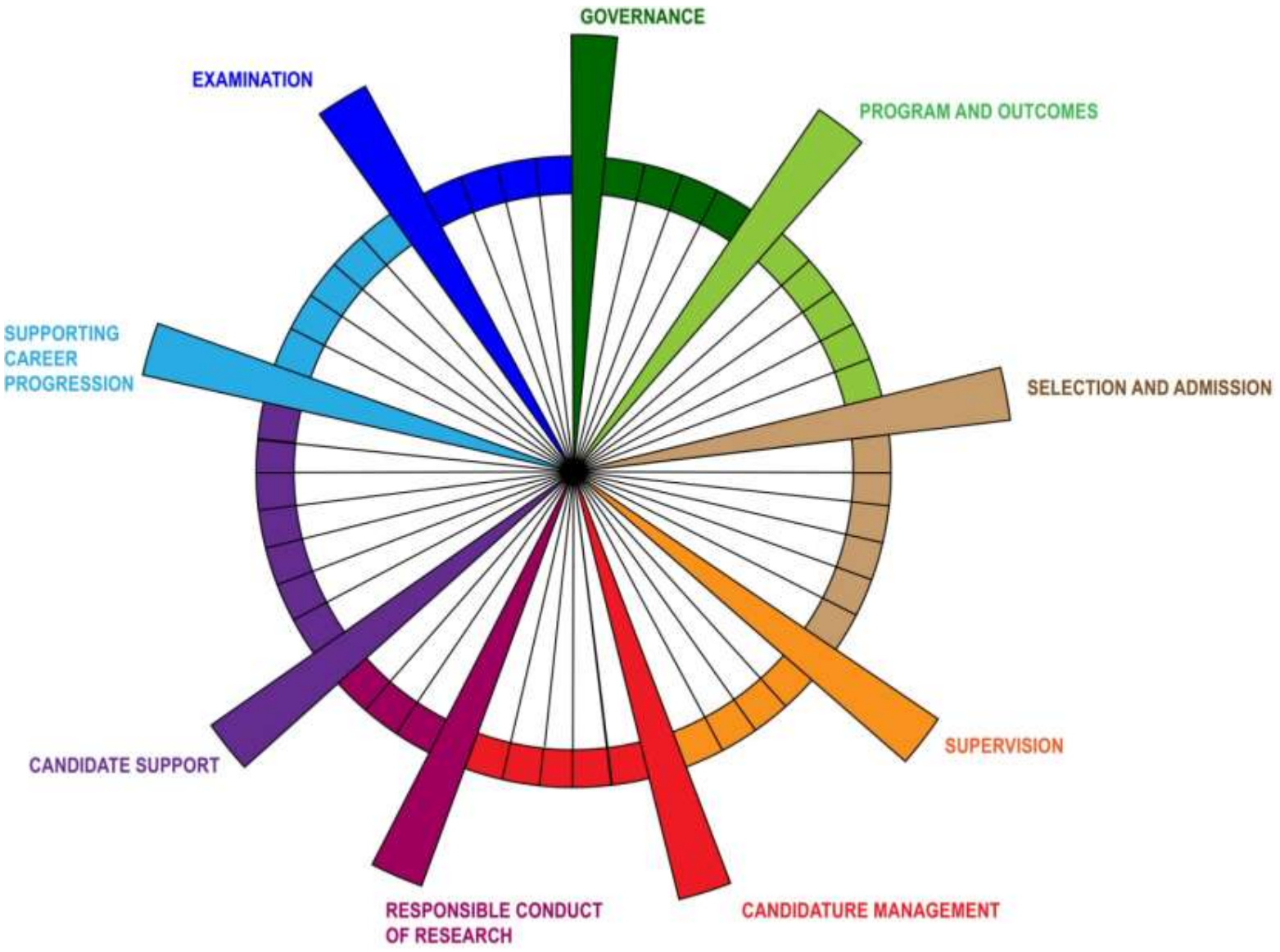
Research Training

- Stakeholders include:
  - Candidates
  - Institutions
  - Government
  - Employers

- Research Training Quality?

Who is the judge?

2. National Context



MEDIA RELEASE
Wednesday 9 April 2014

- Minister Pyne backs call to 'Keep it Clever'!
  - "We do not want Australia's universities to be left behind. We fully support UA's ***Keep it Clever*** initiative to ensure our universities remain competitive and are among the best in the world"
- Mr Evans UA's Deputy Chief Executive
  - "Our future workforce will demand more qualified graduates, our economy will rely on the benefits of research and **the creation of new industries, jobs and opportunities that can flow from a strong university sector**"

Phd Massification - Australia

In 2011

- ~7,000 Phd Completions
- ~11,000 started PhD

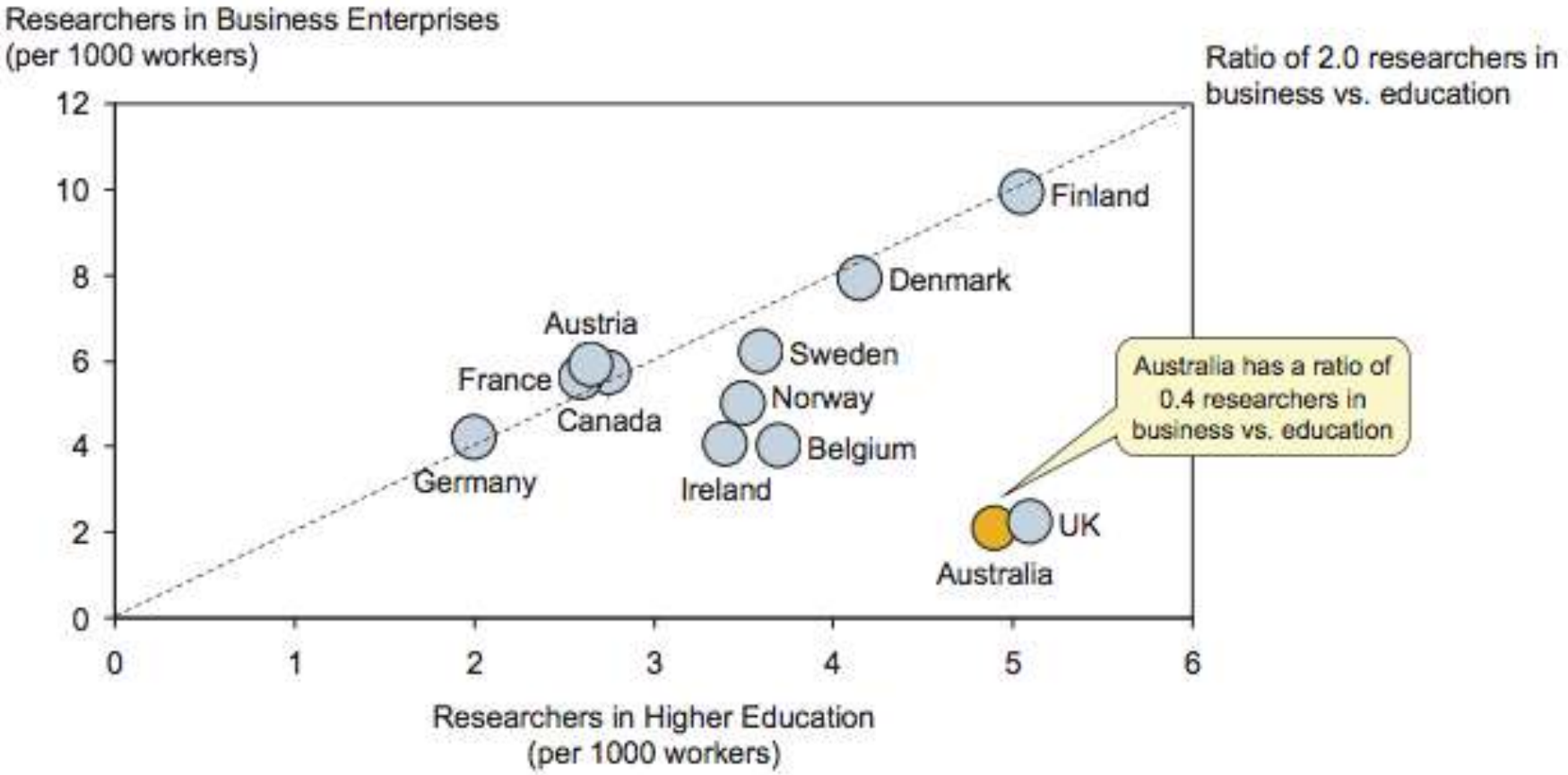
Funding and quality implications?

- ~120,000 PhDs in total

Career and employment implications?

Australian Bureau of Statistics

Researchers in the Business Sector



Department of Health and Ageing, Strategic Review of Health and Medical Research, Final Report February 2013, p. 223

Can we Improve Our Ratio?

- Will the number of academic positions keep up with graduates?
- Need to ensure our candidates are aware that academic positions are extremely competitive and need another options

Research Training Drivers

- Government Legislation
- Tertiary Education Quality and Standards Agency (TEQSA)
- Higher Education Standards Framework
- Research Training Quality in Australia (Consultation Paper, 2011)
- Research Training Scheme
- Australian Quality Framework
- Australian Code for the Responsible Conduct of Research
- DDoGS

Government Legislation

- All institutions must meet quality and accountability requirements set out by:
  - The *Higher Education Support Act* 2003
  - The Tertiary Education Quality and Standards Agency (TEQSA)
  - Australian Quality Framework (AQF)
  - Australian Code for the Responsible Conduct of Research

Tertiary Education Quality and Standards Agency (TEQSA)

- Assures the quality of Australia's HE sector
  - '*protecting and enhancing excellence, diversity and innovation in higher education in Australia*.'
- Formal quality assessments include:
  - Regulating against the *Higher Education Standards Framework* (Threshold Standards)
  - Higher Education practices, processes and outcomes
  - Identifies systematic risks and weaknesses
  - Informs future direction of policy etc. etc.

http://www.teqsa.gov.au/for-providers/quality-assessments

Higher Education Standards Framework

- **'Threshold'** Standards are legislative instruments, and TEQSA commenced regulating against them in Jan 2012
  - Provider Registration Standards
  - Provider Category Standards
  - Provider Course Accreditation Standards
  - Qualification Standards
- **'Non-Threshold'** Standards are not being regulated against yet and include Teaching and Learning, **Research** and information standards

http://www.comlaw.gov.au/Details/F2013C00169

Draft Higher Education Standards: Research Training (May, 2013)

1. Academic Governance
2. Coursework compliance
3. Supervisor research relevance and expertise
4. Supervisor qualifications
5. Induction including code of conduct, ethics, OHS and IP
6. Candidate Support
7. Examination
8. Monitoring and Review

Higher Education Standards Framework
http://www.hestandards.gov.au/engagement/call-comment-number-2

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Research Training Quality in Australia Consultation paper Oct 2011

- Department of Innovation, Industry, Science and Research (Australian Government)
  - Help define research training quality
  - How it can be measured and encouraged?
- Engaged the sector in considering quality
- Many submissions
- Criteria….

Defining Quality for Research Training in Australia, 2011

- http://www.innovation.gov.au/research/ResearchWorkforceIssues/Documents/DefiningQualityforResearchTraininginAustralia.pdf

Criteria for Quality

- **Research environment** includes:
  - Physical resources, including research infrastructure
  - Opportunities for fieldwork, international exposure, conference attendance etc.
  - Supervision
  - Depth and breadth of the scholarly environment
- **Research training program** includes:
  - Deep, subject specific knowledge, and
  - Broader skills, including generic or 'employability' skills

Defining Quality for Research Training in Australia, 2011

Research Training Scheme (RTS)

- Dominant influence in Research Training
  - Driver for pathways and course structures
- Block grants to support Doctoral and Research Master students. Based on:
  - Weighted HDR completions 50%
  - Total research income 40%
  - Research publications 10%
- The RTS funding pool remains fixed!!

http://www.education.gov.au/research-training-scheme

Objectives of the RTS are to:

1. Enhance the quality of research training provision in Australia
2. Improve the responsiveness of HEPs to the needs of their research students
3. Encourage HEPs to develop their own research training profiles
4. Ensure the relevance of research degree programs to labour market requirements
5. Improve the efficiency and effectiveness of research training

Other Grants Guidelines (Research) 2012
Higher Education Support Act 2003

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Australian Quality Framework

- National standards & unified system for qualifications in schools, vocational education and training and the higher education sector
- Expressed in terms of :
  - **Knowledge** is what graduate knows and understands
  - **Skills** is what the graduate can do
  - **Application of knowledge and skills**, is the context in which a graduate applies knowledge and skills

http://www.aqf.edu.au/

Australian Quality Framework

- "The Doctoral Degree (Research) is designed so that graduates will have undertaken a program of independent supervised study that produces significant and original research outcomes culminating in a thesis, dissertation, exegesis or equivalent for independent examination by at least two external expert examiners of international standing."

Australian Code for the Responsible Conduct of Research

- Guides institutions and researchers in responsible research practices and promotes research integrity
- Guides institutions and researchers in the responsible conduct of research
- Contains a section devoted to the supervision of research trainees

Developed jointly by the National Health and Medical Research Council, the Australian Research Council &Universities Australia
https://www.nhmrc.gov.au/guidelines/publications/r39

What is the Code?

- Part A: **Best practice for institutions and researchers**
  - How to manage research data and materials
  - How to publish and disseminate research findings
  - Attribution of authorship
  - How to conduct effective peer review
  - How to manage conflicts of interest
  - Etc..
- Part B: **Breaches of the Code and research misconduct**
  - Institutions and researchers responsibilities for research misconduct
  - Ensure there are agreed, clear, fair and effective processes in place in the event of an allegation of research misconduct

Good Practice Principles
DDOGS

- Principles being developed as Reference Points noted in the Standards that should be addressed by Universities for accreditation/under audit
- Six Good Practice Principles + 37 Sub-Principles
- Include admissions, candidature support, employability skills, research culture, supervision and examination

Proposed Legislative and Developmental Processes for Research Training

LEGISLATIVE

- National Standards (Standards Panel)
- Good Practice Principles (DDOGS)

DEVELOPMENTAL

- Good Practice Framework (DDOGS)
- Good Practice Guidelines (DDOGS)

Quality

Life is too short
to drink bad wine

Life is also too short for
poor quality
Doctoral Education!

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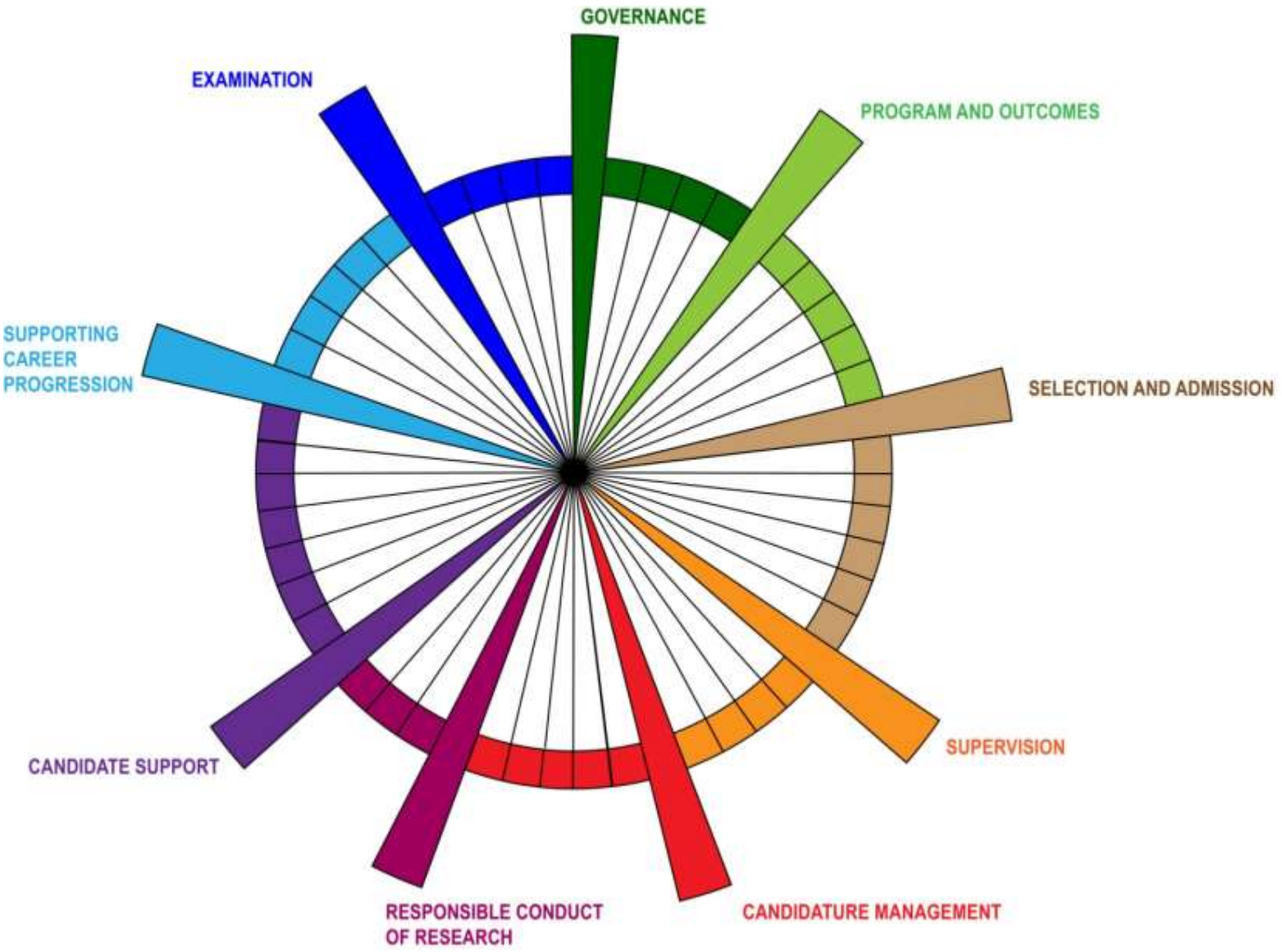
3. Good Practice Framework



Background

- Office of Learning and Teaching (OLT) Project awarded to Edith Cowan University in 2011 to develop:
  - **Good Practice Framework for Research Training in Australia**
- Driven and approved by the Deans and Directors of Graduate Studies (DDoGS) and an expert reference group

Rationale

- Outline key processes and practices important for university research training
- Promote **continuous improvement** for institutions with a template for
  - Systematic reviews the alignment of goals, priorities and practices
  - Identifying areas of strength and for improvement
  - Sharing good practice principles & processes
- Systematic benchmarking

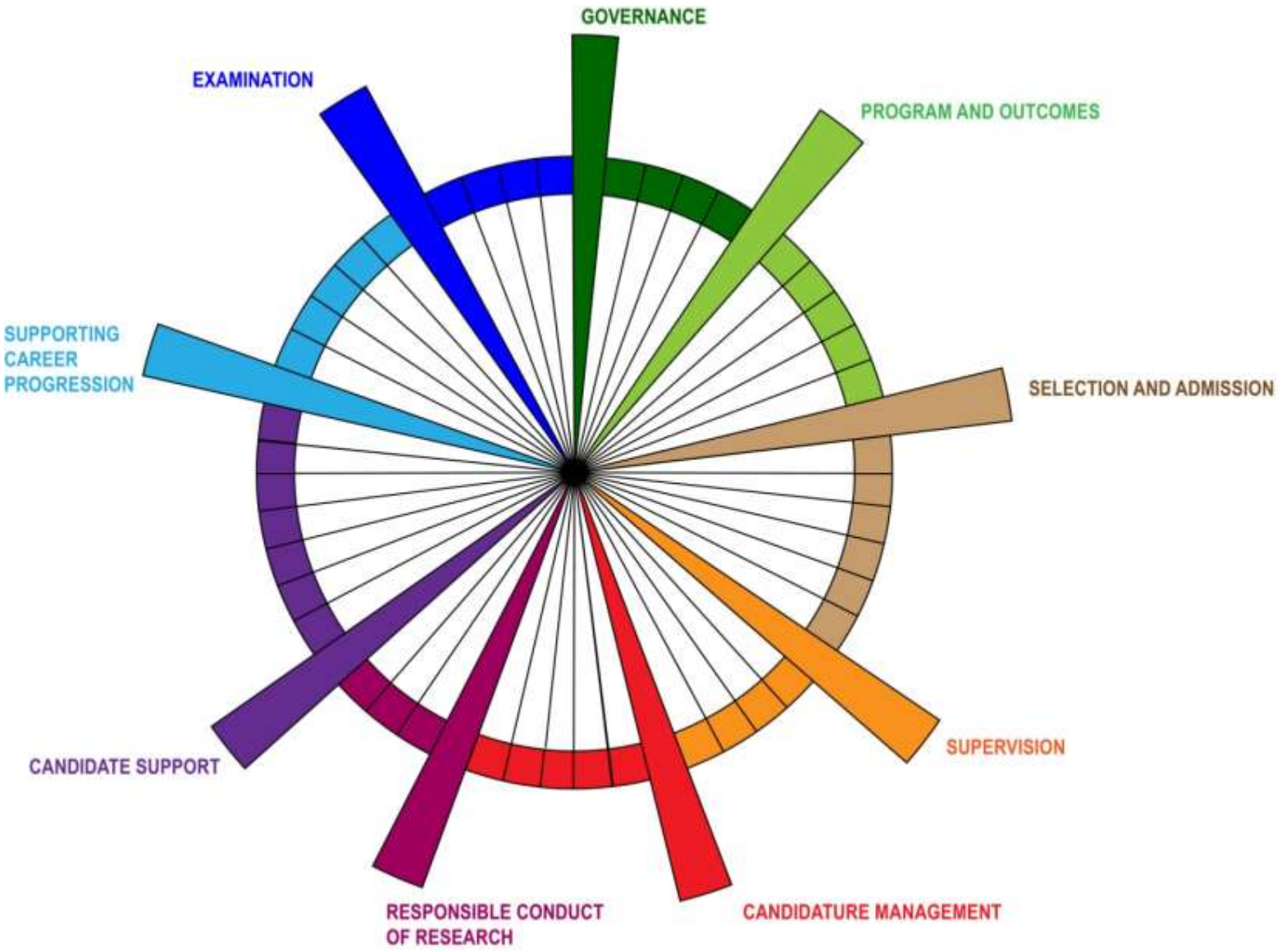
Key Participants

- DDoGS
- Project Leader – Professor Joe Luca
- Project Manager – Ms Trish Wolski
- Project Support – Professor Barbara Evans, Dr Sara Booth & Mr Nigel Palmer
- Expert reference group (national and International)
- Champions – DDoGS x 10
- Reviewers
- External Evaluator – Dr Margaret Kiley

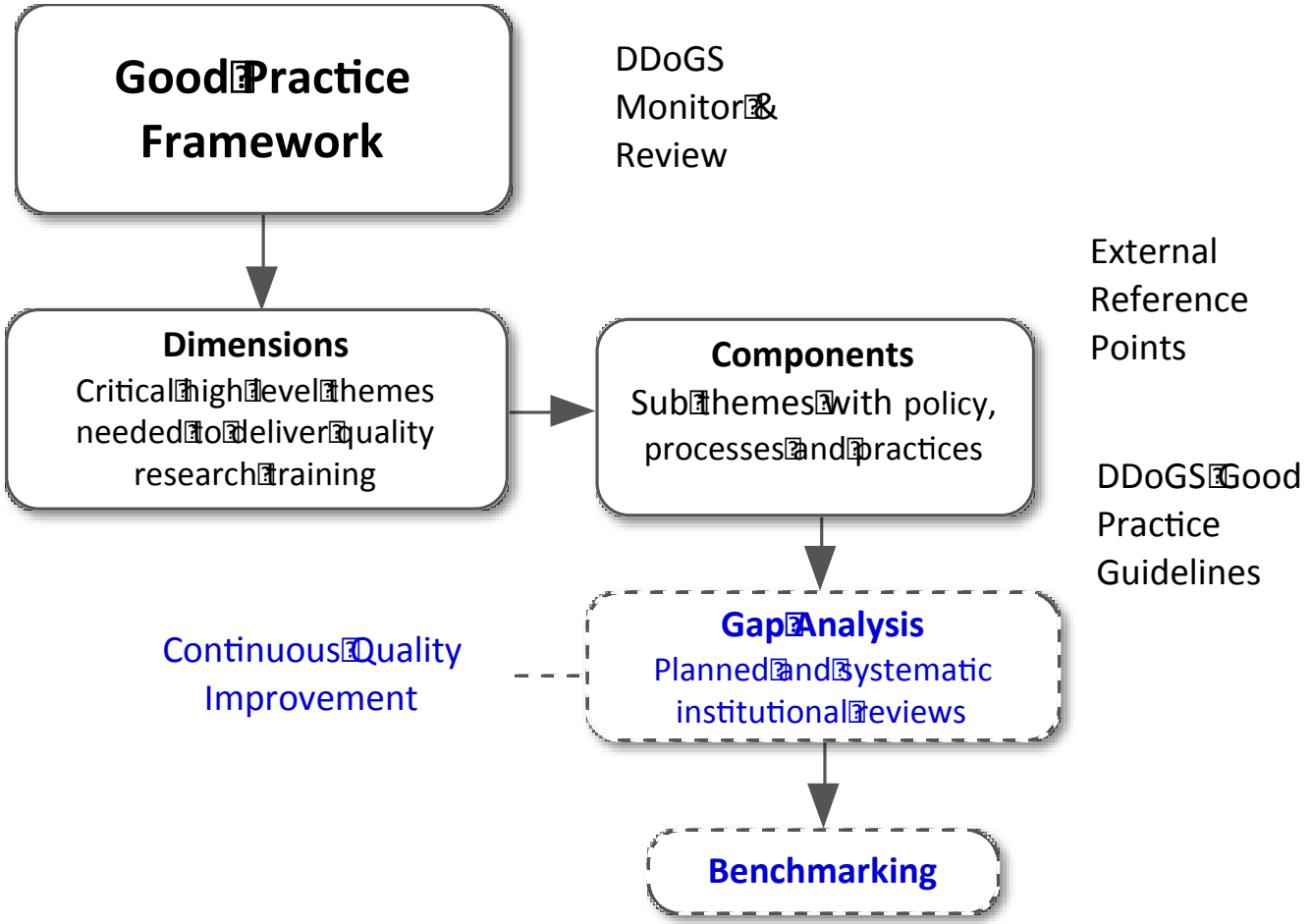
GPF and Gap Analysis available at:

- http://www.ecu.edu.au/centres/graduate-research-school/good-practice-framework-for-research-training (ECU)
- http://media.wix.com/ugd//4d7320_741fe7a5b6a261baf4bd2bc378e12c0d.pdf (DDOGS)
- http://olt.gov.au/resources, search resource library for “Good Practice Framework for Research Training” (OLT)

Key Elements of the GPF



GPF Structure



GPF Structure

1. **Good Practice Framework (National Level)**
   - **Dimensions:** Critical high level themes needed to deliver quality research training
   - **Components:** Sub themes with policy, processes and practices that promote research training excellence
   - **DDoGS Good Practice Guidelines:** Guidelines developed and approved by DDoGS, which exemplify good practice and help assure HDR program quality eg *Conflict of Interest Guidelines*
   - **External Reference Points:** Requirements and information needed in each Dimension by HE institutions in Australia.
2. **Continuous Quality Improvement (Institutional Level)**
   - **Gap Analysis:** Planned and systematic reviews, surveys, measures, reports, and procedures that ensure HE institutions provide services which meet or exceed expectations of HDR candidates
   - **Benchmarking**

Good Practice Guidelines

- Establishing Good Practice guidelines to exemplify good practice and support HDR program quality
- Aligned to specific Components of the GPF
  - Conflict of Interest Guidelines for Examiners
  - Editing research thesis
  - Admissions guidelines
  - Candidature management
  - Induction
  - Ensuring appropriate supervision
  - Selecting examiners
  - Supporting dissemination

GPF Dimensions

1. Governance
2. Program and Outcomes
3. Selection and Admission
4. Supervision
5. Candidature Management
6. Responsible Conduct of Research
7. Candidate Support
8. Supporting Career Progression
9. Examination

Good Practice Framework

DIMENSIONS	COMPONENTS	EXTERNAL REFERENCE POINTS (Australia)	DDOGS Good Practice Guidelines and Resources
5. CANDIDATURE MANAGEMENT The institution provides clear, detailed and accessible information to candidates and supervisors to support them in managing candidate progress and professional development.	**5.1 Supervisor and Candidate Responsibilities** The entitlements, roles and responsibilities of supervisors and candidates are clearly defined and communicated. Specific provisions are outlined in a candidature agreement signed by each candidate and the principal supervisor (on behalf of the institution).	Provider Registration Standards Provider Course Accreditation Standards AQF Australian Code for Responsible Conduct of Research.	
	5.2 Orientation and Induction Orientation and induction programs for candidates should provide: • Clear and comprehensive information on expectations, degree requirements, candidate management, and the range of support services available. • Information related to international candidate requirements; and • Clearly articulated responsibility for orientation and induction programs at academic unit and institutional level. •	Australian Code for Responsible Conduct of Research Provider Registration Standards	
	5.3 Confirmation of Candidature Confirmation of candidature requires transparent and demonstrable evidence that the candidate is highly likely to fulfil their degree requirements in the required time. Candidate enrolment will be provisional until confirmation has been successful which occurs within the first year of enrolment. Confirmation requires: • Ethics approval (see also 6.2); • A comprehensive research proposal, including work completed to date, with rigorous assessment of the academic merits; and • An oral presentation to a group including peers and academic staff with both oral and written feedback provided. No candidate will be confirmed until these requirements are fully met. Where candidature is not confirmed, advice is provided about possible alternative academic or other pathways.	Provider Registration Standards Provider Course Accreditation Standards	

1. Governance

- **Dimension:**

  Institutions ensure there is an efficient and effective HDR governance framework, which assures and enhances research-training quality.
- **Components:**

  1.1 HDR Committee

  1.2 Policies

  1.3 Candidate Representation

  1.4 Grievance Procedures and Appeals
- **External Reference Points**
- **DDoGS Good Practice Guidelines**

2. Program and Outcomes

- **Dimension:**

  The institution has a program that requires candidates to produce quality research as part of their HDR degree program.....

- **Components:**

  2.1 Program Review

  2.2 Candidate Performance

  2.3 Tailored Coursework and Research Training Skills

  2.4 Professional Skill Development

  2.5 Candidate Feedback Mechanisms

- **External Reference Points**
- **DDoGS Good Practice Guidelines**

3. Selection and Admission

- **Dimension:**

  The institution ensures that selection and admissions procedures are clear and easily accessible, and consistently and equitably applied.
- **Components:**

  3.1 Provision of Information and Initial Enquiry

  3.2 Entry Pathways

  3.3 Transfer and Advanced Standing

  3.4 Matching Needs, Resources, and Supervision

  3.5 Selection, Approval and Offer

  3.6 Enrolment
- **External Reference Points**
- **DDoGS Good Practice Guidelines**

4. Supervision

- **Dimension:**

  The institution provides HDR candidates with a supervisory team that has an appropriate mix of expertise in the discipline(s) of the candidate's research, the relevant research methods, and in supervising successful research degree completions.....

- **Components:**

  4.1 Supervisor Capacity

  4.2 Supervisor Eligibility

  4.3 Supervisory Team Compliance

  4.4 Supervisor Development and Support

- **External Reference Points**
- **DDoGS Good Practice Guidelines**

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5. Candidature Management

- **Dimension:**

  The institution provides clear, detailed and accessible information to candidates and supervisors to support them in managing the candidate's progression and professional development.
- **Components:**

  5.1 Responsibilities of Supervisors and Candidates

  5.2 Orientation and Induction

  5.3 Confirmation of Candidature

  5.4 Monitoring Progression

  5.5 Variations to Candidature
- **External Reference Points**
- **DDoGS Good Practice Guidelines**

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6. Responsible Conduct of Research

- **Dimension:**

  Research training is supported by academic structures, policies and practices that facilitate, require and promote academic research integrity, responsible research conduct and ethical scholarship.

- **Components:**

  6.1 Academic Integrity

  6.2 Ethics

  6.3 Intellectual Property

- **External Reference Points**
- **DDoGS Good Practice Guidelines**

7. Candidate Support

- **Dimension:**

  The institution ensures that HDR candidates have access to required resources which enable timely completion of a quality degree including appropriate physical, financial, administrative, academic, counselling and disability support services.....

- **Components:**

  7.1 Scholarships

  7.2 Research Culture and Engagement

  7.3 Resources and Infrastructure

  7.4 Travel Support

  7.5 Pastoral Care

  7.6 Support Services for Diversity

  7.7 Post Thesis Submission Support

- **External Reference Points**
- **DDoGS Good Practice Guidelines**

8. Supporting Career Progression

- **Dimension:**

  The institution supports HDR candidates in their progression towards their chosen career, and prepares candidates to be competitive and successful in both academic and non-academic careers.....
- **Components:**

  8.1 Curriculum Vitae (CV) and Portfolio

  8.2 Career Development

  8.3 Connecting Graduates, Employers and Alumni

  8.4 Interdisciplinary Awareness

  8.5 Mobility and International Awareness
- **External Reference Points**
- **DDoGS Good Practice Guidelines**

9. Examination

- **Dimension:**

  Work submitted for examination meets international standards and the examination process ensures successful candidates merits the award of the degree.
- **Components:**

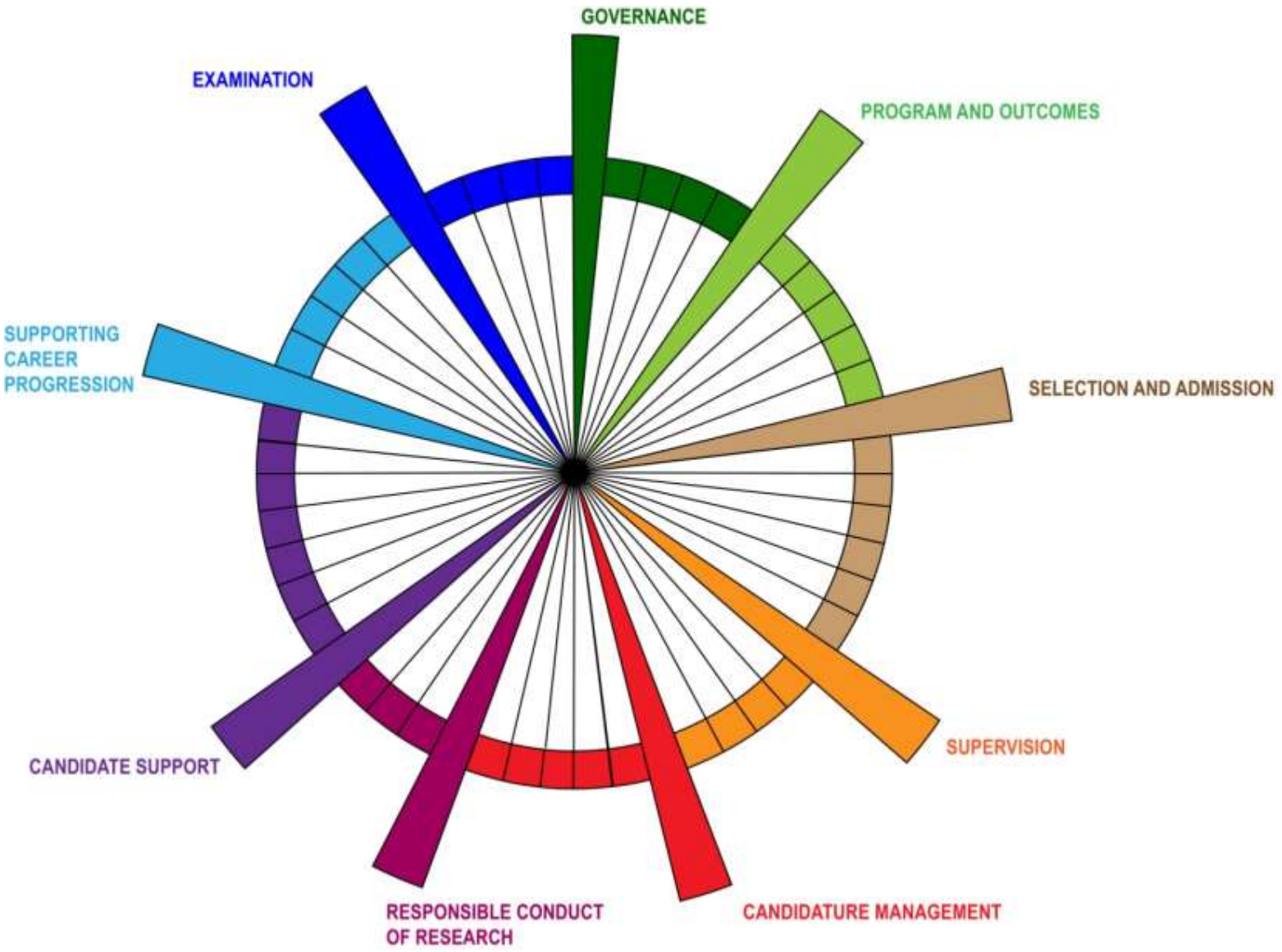
  9.1 Pre Submission Review

  9.2 Appointment of Examiners

  9.3 Examination of Theses

  9.4 Conferral of Award
- **External Reference Points**
- **DDoGS Good Practice Guidelines**

GPF Gap Analysis



Why do a Gap Analysis? (Quality Audit)

- Check institutional claims about its research training objectives
- To what extent are these being achieved?
  - What is the institution good at?
  - What **must** be improved?
  - What would be good to improve (Opportunities)?
- Use results for benchmarking

Gap Analysis Template

- **Review and Improve**
  - QA Questions
  - Rating, 4 point: *Yes, Yes But, No, No But*
  - Evidence
  - Gaps (essential)
  - Opportunities for improvement
- **Plan and Implement**
  - Action required & personnel
  - Set resources, milestones & track progress

Rating

- **Yes** -Effective strategies are implemented successfully across the Institution or faculty
- **Yes, but** - Good strategies in place, some limitations or some further work needed
- **No, but** - This area hasn't yet been effectively addressed, but some significant work is being done across the faculty or institution
- **No** - Effective strategies not developed

Gap Analysis at ECU

Components	Questions	Rating	Evidence	Key Recommendations	Opportunities	Exemplars
2. Program and Outcomes - The institution has HDR programs that require candidates to produce quality research. In the case of doctoral candidates, this must be a significant body of original						
2.1 HDR Program Evaluation Research degree programs are evaluated for success in meeting expectations and needs of candidates, employers, discipline groups and the broader community, through: • Completion rates, time to completion, retention rates; • Examination outcomes; • Candidate surveys; • Alignment with the strategic directions of the institution; and • Alignment with the institution's statements on graduate attributes.	Are program reviews conducted?	no, but	Program reviews not currently conducted. Though, developing a template for initial review		Develop School level program reviews	
	Are reports available with data on - Completion rates; - Time to completion; and - Retention rates?	yes	These performance indicators have been included in Faculty annual reviews. Also, exception reports are created and presented to the Associate Deans of the faculties at RSSC			(1) Exception reports distributed every six weeks (2) Annual Reviews
	Is there a regular audit of the program alignment with the strategic directions of the institution?	no, but	No formal alignment. Though, Scholarships are being realigned to match the strategic priorities of the university.	Develop strategies to allocate scholarships to strategic research areas		
	Is there a regular audit of the program alignment with the graduate attributes set by the institution?	no, but	No. However, all programs are being reviewed for AQF alignment, and a new Doctoral Skills Development program is being introduced		Skills gap analysis being developed for DSD	
	Are reports and audits communicated appropriately to stakeholders?	yes, but	Exception reports are communicated at faculty and school level every six weeks. Performance indicators are reported annually			

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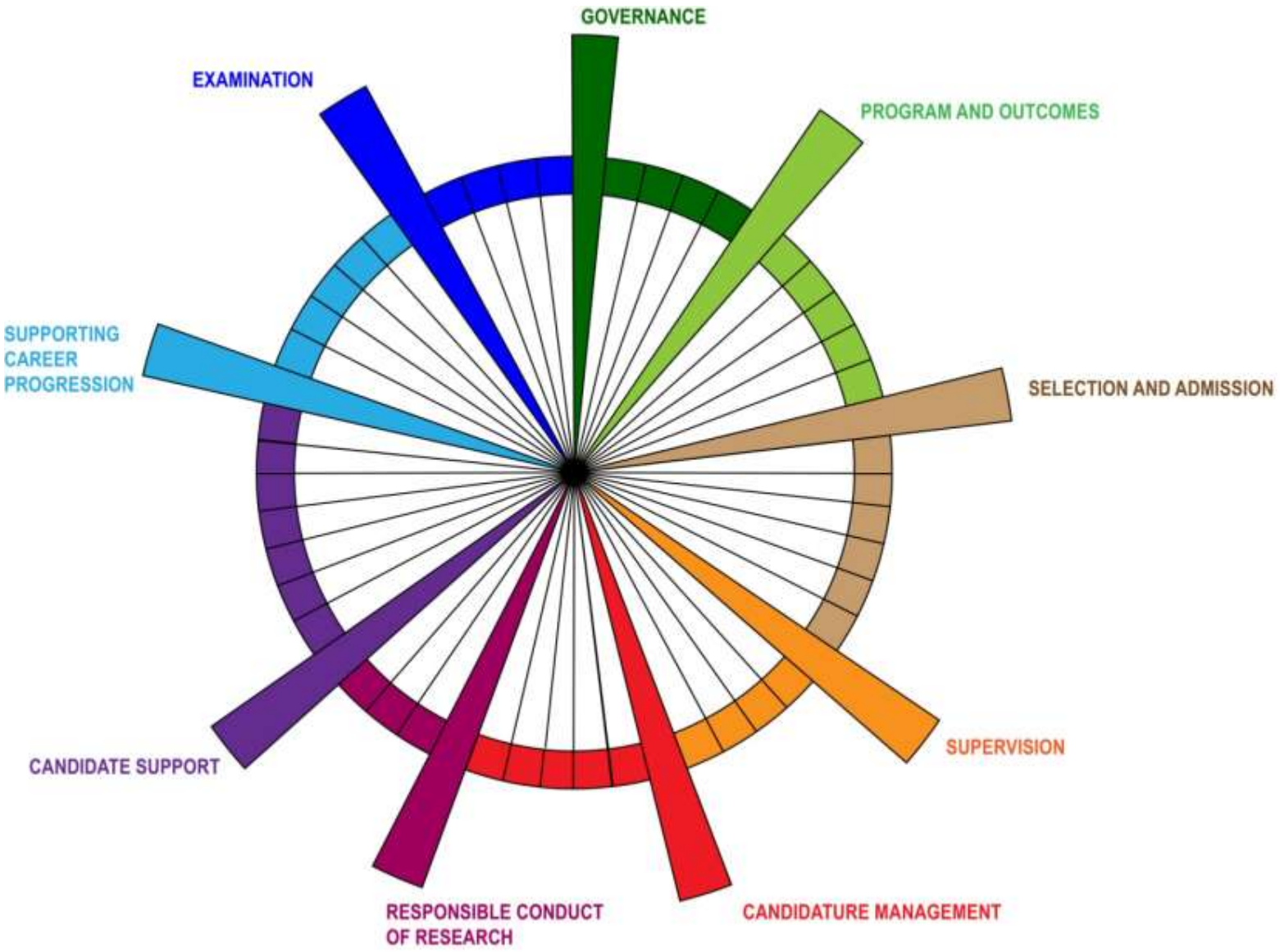
GPF Benchmarking



Benchmarking with GPF

- GPF provides a framework for institutions to compare and contrast processes and performance in specific areas of research training
- Focus on areas of concern e.g. HDR pathways, or supervision
- Share examples of good practice

Benchmarking with GPF

- Five universities agreed to benchmark two Dimensions of the Good Practice Framework
  - **2. Programs and Outcomes and**
  - **8. Employability Skills Development**

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UTAS

VICTORIA UNIVERSITY MELBOURNE AUSTRALIA

Curtin University

JAMES COOK UNIVERSITY AUSTRALIA

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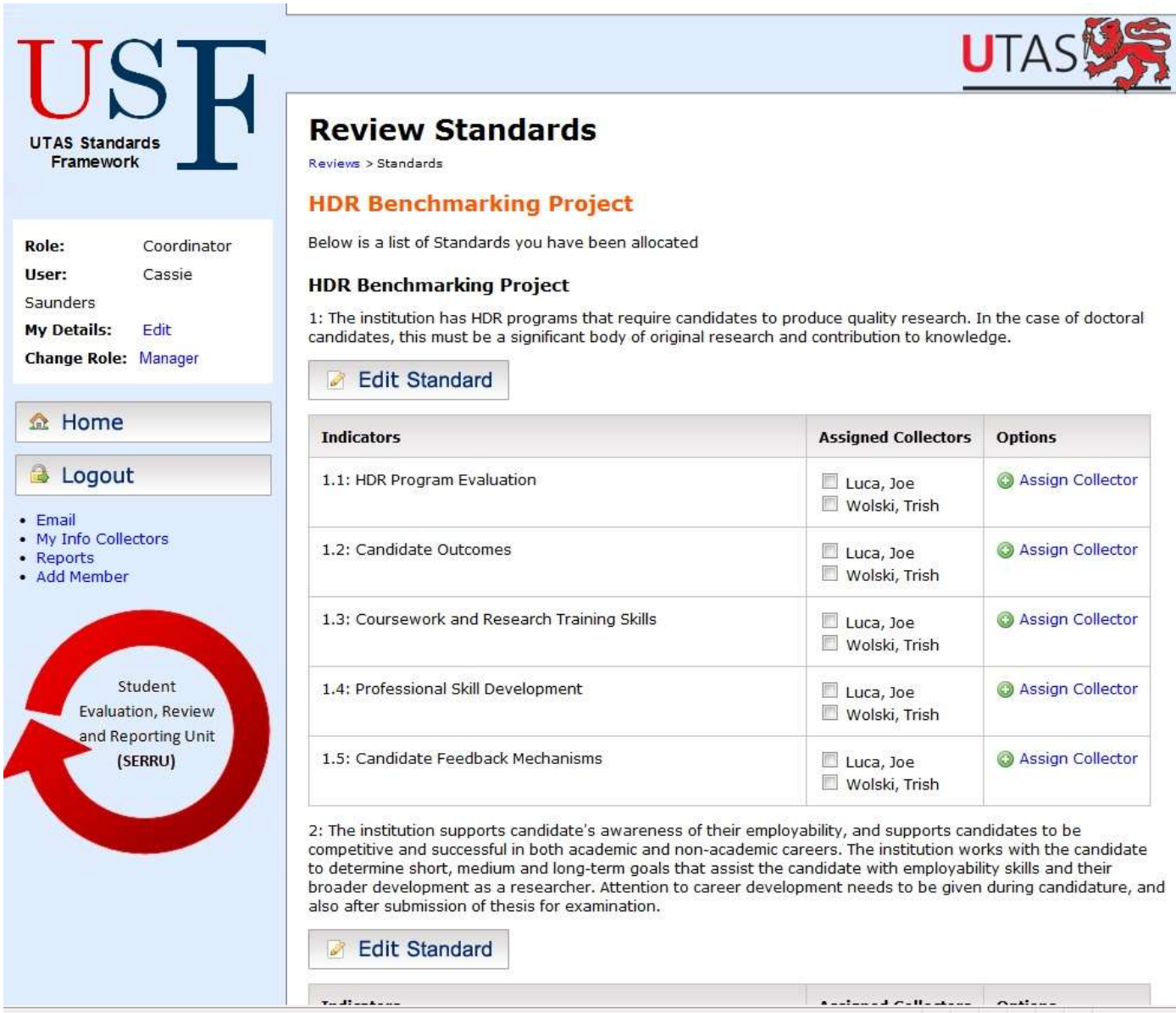
UTAS Benchmarking Tool



Benchmarking Methodology

- **Process benchmarking** is benchmarking that focuses on how results are achieved. It aims to examine, compare and improve performance of processes used in operations
- **Outcome benchmarking** is more about the outputs or data which is used to compare characteristics or trends (in our case – research higher degree enrolments).

Booth, S. (2013). Cross-Institutional Benchmarking Project In Higher Degree Research (HDR) 2013.

Benchmarking

2. Programs and Outcomes

Performance Indicator	Areas of Good Practice	Areas for Improvement	Areas for Sharing
2.1: HDR Program Evaluation	**Sector:** US is much more transparent in program reviews **VU:** 5-yearly review for professional doctorates	**All:** HDR program reviews **All:** HDR graduate attributes are very generic	**Curtin:** Research plan **VU:** Research leader forum; Thesis quality measure; Research plan **ECU:** GS program reviews
2.2: Candidate Outcomes	**ECU & Curtin:** Inter-university summer school **ECU:** Portfolio **UTAS:** Research week conference **VU:** PhD mini conference	**All:** Tracking and measuring candidate outcomes **All:** Candidates working with others beyond their immediate research area	**ECU & Curtin:** Inter-university summer school **ECU:** Portfolio **UTAS:** Research week conference **VU:** PhD mini conference
2.3: Coursework & Research Training Skills	**Sector:** UK have a 'new route PhD' **ECU:** Doctorate skills development program, including learning plan **UTAS:** Learning plan **Curtin:** Essential facilities guide **UOW:** Integrated PhD course	**All:** Developing online communities for skill development	**ECU:** Learning plan **UTAS:** Research plan; Learning plan **Curtin:** Essential facilities guide **ECU:** To set-up meeting with UOW to discuss integrated PhD course **All:** Propose a model for an integrated PhD: OLT project
2.4: Professional Skill Development	**ECU:** Gap analysis and research education coordinators **RMIT:** HDR Big Day Out **UTAS:** Graduate Research Officer **VU:** Research training booking system	**All:** Needs analysis in HDR could be strengthened	**ECU:** Gap analysis and research education coordinators **UTAS:** Graduate Research Officer position description
2.5: Candidate Feedback Mechanisms	**UTAS:** Graduate management meeting **VU:** Annual feedback forum	**All:** Following up with exit surveys and attrition	**VU:** Annual feedback forum **All:** Consider attrition project with OLT

Benchmarking

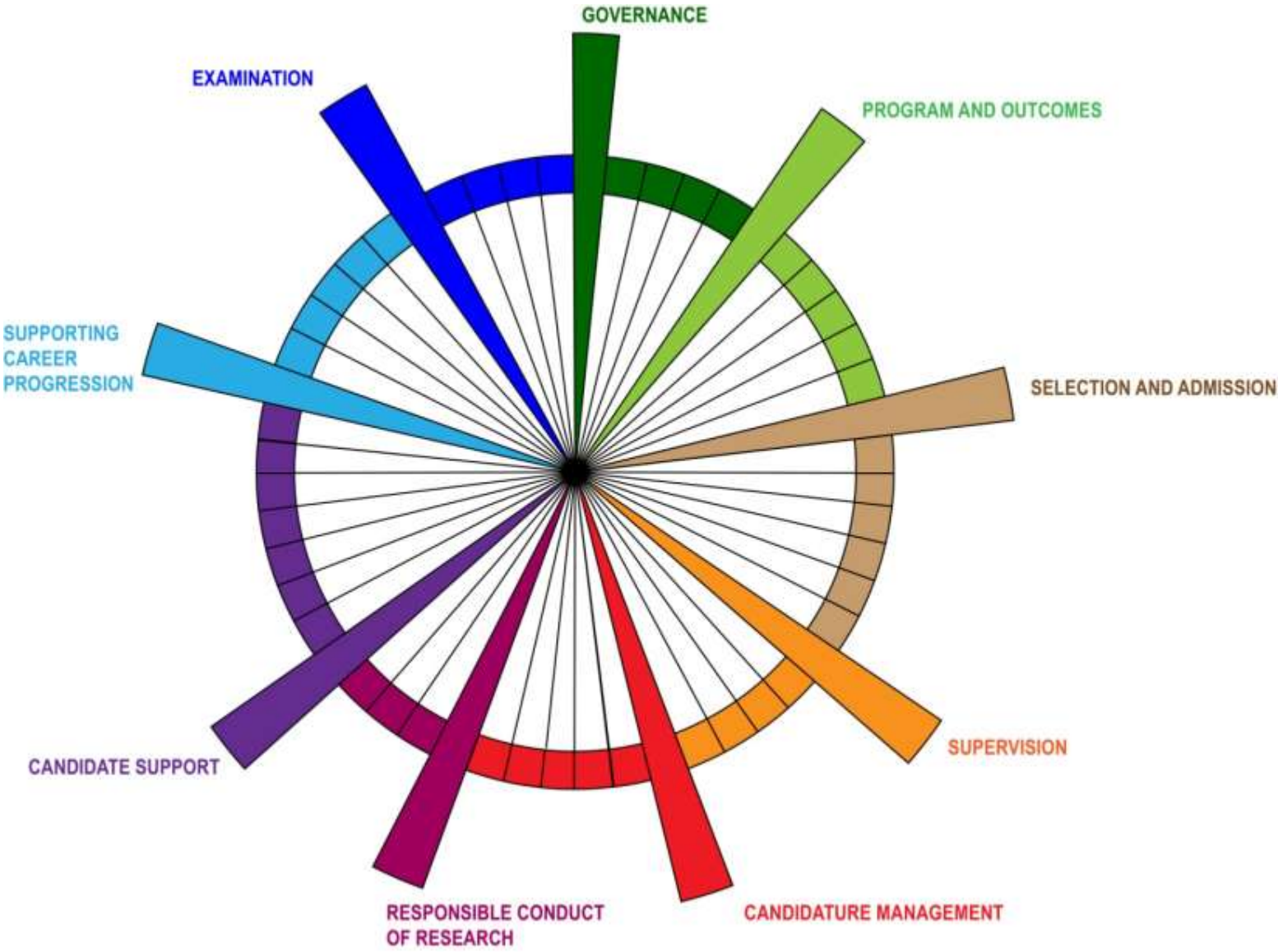
8. Employability Skills Development

Performance Indicator	Areas of Good Practice	Areas for Improvement	Areas for Sharing
8.1: Curriculum Vitae & Portfolio	**ECU:** Ambassadors and PebblePad **VU:** Early career program and network	**All:** Move coordination with university career service; Developing systems to support CV and portfolio development	**ECU:** Ambassadors and PebblePad **VU:** Early career program and network
8.2: Career Development	**Sector:** CRCs track data **Curtin:** ATN Industry Doctoral Training Centre in Maths & Stats	**All:** More engagement with industry in career development; Universities need to improve on collecting employer feedback from industry	
8.3: Networking	**Sector:** CRCs network **ECU:** Industry engagement network **UK:** Research clubs, Cranfield University	**All:** Universities need to improve in collecting information on the number of alumni and employers invited to present and discuss career opportunities with graduates	**ECU:** Industry engagement network **UK:** Research clubs, Cranfield University
8.4: Inter-Disciplinary Awareness	**ECU:** One code to promote inter-disciplinarity **UQ, UTAS & ECU:** Research week		**UTAS & ECU:** Research week
8.5: Mobility & International Awareness	**Curtin & ECU:** Fund students to go to conferences **ECU:** Mobility grant **UTAS:** Coordination with Global Engagement Unit	**All:** Promoting mobility across the universities	**ECU:** Mobility fund application form

Benchmarking Benefits

- Facilitate collaborative discussion between institutions
- Identifies
  - Areas of Good Practice
  - Areas for Improvement
  - Areas for Sharing
- Enable regular review of research training practices

4. Institutional Considerations



ECU Implementation

- GPF Framework, Gap Analysis & Benchmarking
- Operational Plan Template (Excel)
  - Dimension
  - Projects
  - Descriptor
  - Work required (ToDo)
  - Who
  - When
  - Measure of Success

Continuous Improvement at Edith Cowan University

- Industry & PhD Research Engagement Program (*iPREP*)
- Industry Engagement & Inspiring Minds Scholarships
- Doctoral Skills Development Program – **MyPLAN**
- Integrated PhD Program (1 + 3)
- HDR Mobility programs
- SOAR (peer-to-peer service)
- InSPiRE inter-university research training conference
- Supervisor register
- Supervisor training (compliance & practice)
- Etc ….

http://intranet.ecu.edu.au/research/for-research-students/overview

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Change Management

- Can be difficult!
- How do you sell it?
  - Another layer of bureaucracy?
  - Series of checks to improve quality?
- “Good” Data is critical!
  - satisfaction, completion rates, time to completion.
- How will it be resourced?
- Who will do most of the work?

At Edith Cowan University

- Attempt to insert coursework in Doctoral Programs…

French Wine

- Produces almost 8 billion bottles per year
- Largest wine producer in the world
- Trace history to Roman times
- France is the source of many grape varieties (Cabernet Sauvignon, Chardonnay, Pinot noir, Sauvignon blanc, Syrah)

Appellation

- Strict laws concerning winemaking and production
- Define which grape varieties and winemaking practices are approved for classification in each of France's several hundred geographically defined regions.

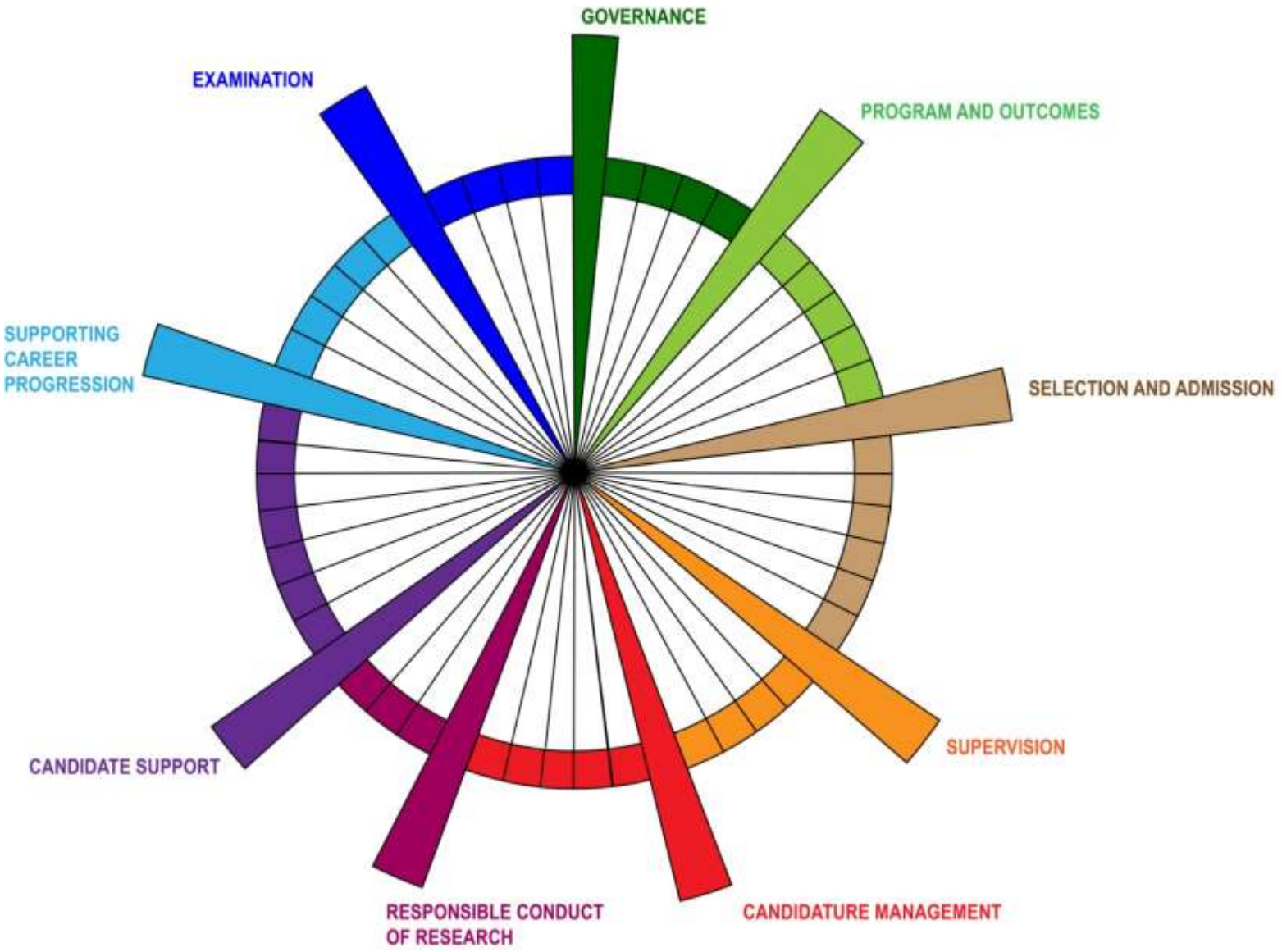
http://en.wikipedia.org/wiki/French_wine

Changing Paradigms

- Formal research training for the PhD
- Focus on a quality thesis and the researcher
- The future of Honours? Alternative pathways
  - 3 + 1 + 3, 3 + 2 + 3, 3 +1 + 1 + 3, 4 + 1 + 3
- Changes in TEQSA, HESP and RTS Funding

In Australia, each institutional is developing their own strategy

5. Conclusions



Doctoral Program Considerations

- Good quality data, continuous improvement cycles and change management needed:
  - **Candidates**
    - How many are needed? In what areas?
    - Training for career and professional skills
  - **Impact and engagement**
    - Research translation and commercialisation
    - National priorities & wellbeing
  - **Doctoral training program models**
    - Legislation, funding, standards, frameworks and guidelines
    - Pathways and delivery models
  - **Systematic Business investment and collaboration**

A Final Thought

- Penfolds Bin 389 2008, Cost $75
  - Often referred to as 'Poor Man's Grange’
- Penfolds Grange 2008, Cost $750

- What are we aiming for in research training?