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Research Planning – help or hinderence?

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Outline

- Motivation
- Background
- The concept of the “Research Plan”
- Elements of a RP
- Using a RP – mentor and mentoree
- How NOT to use a RP...
- Summary

Motivation



- Research is the element of academic life many (most) academics enjoy the most
- We also, like most people, like to be “successful”:
 - advance science & engineering knowledge and practice;
 - publish papers in high repute venues;
 - secure grants to resource our research;
 - attract and work with talented students and colleagues;
 - advance our careers commensurate with this success;
 - have “impact” with our research – ultimately changing the field in which we work

But...



■ Its (a lot) harder than we thought, were led to believe...

- Competition for grants
- Competition for resources
- Finding and supervising students, post-docs
- Building effective collaborations
- Writing papers
- Getting papers published
- Need to spend time on other tasks
- Lack of time

Background



- When I was Deputy Head Research for the Dept of Electrical & Computer Engineering at the University of Auckland...
- ...we found ECRs (and many others – including several Profs!) were struggling to advance their research careers
- Dept (and Faculty) were struggling to improve research performance
- No effective mentoring programme existed
- We wanted to assist them – work with them and better support them individually and at Dept/Faculty levels

Background



■ After talking with many researchers:

- Found many had no clear idea where they were going, where they wanted to get to, where they were at now – nor what they were capable of
- Found many discouraged by lack of grant success, rejections of papers, struggling to recruit good RHD students, struggling to develop effective collaborations
- Found all had excellent training in scientific and engineering methods, many significant project management experience
- Found most had no structured approach whatsoever to their work – research or teaching or professional development
- Found they seldom conveyed this to HoDs, ADRs...

The concept of the “Research Plan”



- Actually *think* about one’s (research) career: where at; going; want to get to; how to get there
- Capture key research goals, objectives, metrics – short range (1-2 years) and longer (3-5 years)
- Identify key needs, inhibiting issues
- Provide a mentor to work with researcher to assist
- Use to set and report PDR-style objectives
- Feed individual goals into research group, Department, Faculty planning processes (resourcing, external grant support, internal funding schemes, sabbaticals, etc)

Elements of a Research Plan



- The form I use here is a Departmental RP developed by myself and Dr Jim McMillan, research advisor to the Faculty of Engineering, University of Auckland
- Had other RPs: ECR-specific; for non-research active staff (to help them develop research activity); for HoDs (to capture DEPARTMENT RP vs individual...)
- Key Elements:
 - Research Vision and Directions
 - Statement of goals: “faculty” and “department”
 - Needs/limitations

Vision and directions



■ Articulate these:

- Research statement: area, key achievements to date, focus
- Recent, current projects, key achievements
- Key medium-term goals: “big hit” paper; promotion; grant; membership; editorial board; ...
- Key long-term goals

■ We augmented this with a research grant abstract

- Make people think about key short-term grant to achieve
- Expected to submit – might need collaborators
- Idea was to increase # and quality of grants from Faculty
 - Could apply to other outcomes e.g. RHD recruitment, industry, ...

Goals



■ “Faculty level”:

- Publications to submit – title, venue
- Funding applications to submit – topic, granting body, collaborators
- “research associates” – Hons, RHD, post-doc, ...

■ “Department level”:

- Incoming visitors – who, why, likely outcomes, how fund
- Visits – where, why, likely outcomes, how fund
- Conferences – which, why, likely outcomes, how fund
- Involvement with Industry and Consulting – which companies, expected outcomes

Issues



- Limitations – what is limiting your research programme???
- Needs – state key needs (short term and longer term) – often described as “CAPEX Dreams” (i.e. equipment) by Engineers!
- Ways the Department / Faculty / University can help – just like it says!
 - We **really** wanted answers to this!
 - We couldn't “fix” all of these of course – but as an HoD/ADR/mentor its really, really useful to know and discuss...

Using a RP



- You can develop & use by yourself
 - I set my own research plan each year & review each year
- You can use with a research mentor – helps to set the scene for conversation
- Can augment the Academic Performance Review – again as a conversation piece, NOT a metrics-driven set of too weak / too ambitious targets...
- Very useful for feeding into Dept/Faculty planning – very hard to get this info otherwise
 - E.g. how can we best spend Dept/Faculty research \$?

How not to use...



- As a bureaucratic exercise – “I’ve done my RP, now to file it away...”
- As a record of research planning – but with no action by researcher, mentor, HoD, ADR, Dean...
- Under-ambitious – if don’t stretch oneself, will never achieve full potential
- Over-ambitious - need also to be realistic and work within one’s capabilities; play to one’s strengths
- To the exclusion of other academic goals:
 - Teaching
 - Leadership and service

Summary



- Academics – especially Engineering academics - are notoriously bad planners of their own careers, research
- A research plan forces one to identify current performance and behaviors and desired ones – and ways to start getting there
- A research plan helps articulate in a structured way these visions, directions, goals, limitations
- Instead of wanting “better research performance” as an individual or Dept/Faculty – actually does something about it... (“walk the talk” as we say in New Zealand...)