Research career lessons

Prof. Chris Maher

Overview

- What I did vs what I would recommend today.
  - Academic progression
  - Publications
  - Research topics
  - Research students
  - Research team

- George Institute
Academic progression
What I did...

- 1981: PT degree
- 1988: Ex & Sports Sci degree
- 1989: Manips degree
- 1990: Lecturer
- 1994: Got married
- 1996: PhD
- 1998: Senior Lecturer
- 1988: Rebecca born
- 2003: Associate Professor
- 2006: NHMRC Fellowship
- 2007: Rebecca realises Dad is fallible
- 2008: Professor
- 2008: Director George Institute
- 2010: ARC Future Fellow & NHMRC fellow
- 2011: Rebecca rolls her eyes at her Dad

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Academic progression
What you should do...

- Enrol in a PhD ASAP
  - Work in a strong multidisciplinary team
  - Work on a funded project
  - Be a full time student
- Do a postdoc in a strong multidisciplinary group
- Apply for NHMRC or ARC people support funding
- Being to lead your own team
- Leadership role in a strong research intensive entity
Publications
What I did...

- 1992: 1st journal paper (IF=3.0)
- 1993: 1st non-physio journal
- 2002: 100 journal publications
- 2007: 1st Lancet paper (IF=38.278)
- 2008: 200 journal publications
- 2011: 27 publications that year
- 2012: BMJ x1, CMAJ x 2, Annals x1

My publication metrics

Citations in Each Year

Published Items in Each Year
Publications
What you should do...

- Reach beyond your discipline
  - Subscribe to eTOC of NEJM, Lancet, BMJ etc
  - Collaborate & publish with non-Chiros
  - Publish in Chiro & other journals

- Get involved in peer-review
  - Review for the best journals
  - Invite yourself onto editorial boards

- Publish in the very best journals
  - Collect rejection slips from the very best journals
  - Indexed
  - High impact factors

Who am I?

[Images of stuffed animals with labels]
My research projects

<table>
<thead>
<tr>
<th>Then</th>
<th>Now</th>
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<tbody>
<tr>
<td>• Me</td>
<td>• Multidisciplinary team</td>
</tr>
<tr>
<td>• Local</td>
<td>• International</td>
</tr>
<tr>
<td>• Physio focus</td>
<td>• Reaches beyond physio</td>
</tr>
<tr>
<td>• Small</td>
<td>• Large scale</td>
</tr>
<tr>
<td>• Short term</td>
<td>• Long term</td>
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</tbody>
</table>

Trials


Reviews


Mechanisms studies


Funding
What I did...

- 1991: 1<sup>st</sup> research grant
- 2000: 1<sup>st</sup> NHMRC grant
- 2001: 1<sup>st</sup> ARC grant
- 2001: $0.5M cumulative funding
- 2002: 1<sup>st</sup> research donation
- 2002: $1.0M cumulative funding
- 2008: $6.0M cumulative funding
- 2009: 1<sup>st</sup> grant >$1M
- 2012: $13.0M cumulative funding

Building track record

25% < $10K, 50% < $33K, 75% < $82K
Building track record

![Graph showing funding growth]

Funding

What you should do...

- Learn the rules, be strategic
- Collaborate, get a mentor
- Work in strong multi-disciplinary teams
Research students

What I did...

- 1997: 1st Hons completion
- 2001: 1st PhD completion
- 2002: Associate Dean (4 years)
- 2008: 12 PhD completions
- 2012: 23 PhD completions

Research students

What you should do...

- Supervise ASAP
  - Start as an associate
  - Do a formal training program
  - Learn the policies

- Be very fussy in who you take on
  - Most capable students
  - Full time & on scholarships
  - Get them to work on your (funded) projects

- Give them the best facilities you can
Research team
what you should do

- Work within a strong, supportive institution
- Recruit bright people who can work together & who bring their own salary
- Focus on a few strengths
- Collaborate with the very best
- Innovation vs more of the same
- Don’t be a big fish in small pond
Who are we?

- Medical Research Institute established in 1999
- International presence (The George Institute, Australia; The George Institute, China; The George Institute, India; The George Institute, UK)
- Affiliated with Sydney University, Oxford University, Peking University, Public Health Foundation of India
- Focus
  - Population health and clinical research
  - Chronic diseases and injury
  - Projects across the world in 47 countries

A global Institute

- Fully staffed and functioning centres in:
  - Sydney, Australia
  - Beijing, China
  - Hyderabad, India
  - Oxford, United Kingdom
- We run projects and studies in:
How are we funded?

INSTITUTE FUNDING SOURCES 2010-11

- George Clinical 42%
- Peer-review 26%
- Other 10%
- Contract research 10%
- Infrastructure grants 9%
- Other Government 2%
- Donations received 1%

Our academic divisions (Australia)

- Cardiovascular
- Critical Care and Trauma
- Renal and Metabolic
- Injury
- Musculoskeletal
- Neurological and Mental Health
Some of our achievements...

<table>
<thead>
<tr>
<th>SIR World Report 2011 :: Normalized Impact Report</th>
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Publications

- Regular publication in the world’s leading scientific journals, including *The New England Journal of Medicine*, *Lancet*, *British Medical Journal* and *Annals of Internal Medicine*
- Experts are frequently invited to submit editorials to these major publications

<table>
<thead>
<tr>
<th>Year</th>
<th>08-09</th>
<th>09-10</th>
<th>10-11</th>
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<tbody>
<tr>
<td>2010</td>
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Leading publications

A sample of publications in the leading academic journals:

<table>
<thead>
<tr>
<th>Journal</th>
<th>Title</th>
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<tbody>
<tr>
<td>Lancet</td>
<td>Effects of fibrates on cardiovascular outcomes: a systematic review and meta-analysis</td>
</tr>
<tr>
<td>Lancet Neurology</td>
<td>Injury-related fatalities in China: an under-recognized public health problem</td>
</tr>
<tr>
<td>Lancet Neurology</td>
<td>Effects of blood pressure control in patients with type 2 diabetes: ADVANCE</td>
</tr>
<tr>
<td>The New England Journal of Medicine</td>
<td>Intensive versus conventional glucose control in critically ill patients</td>
</tr>
<tr>
<td>British Medical Journal</td>
<td>Effects of intensive blood glucose control in patients with type 2 diabetes: ADVANCE</td>
</tr>
<tr>
<td>Stroke</td>
<td>Prognosis in patients with recent onset low back pain in Australian primary care</td>
</tr>
<tr>
<td>Stroke</td>
<td>Life events and risk of subarachnoid hemorrhage</td>
</tr>
<tr>
<td>The Medical Journal of Australia</td>
<td>Cardiovascular disease risk management for Aboriginal and Torres Strait Islander peoples in primary health care settings</td>
</tr>
<tr>
<td>Circulation</td>
<td>The prevalence, awareness, treatment and control of hypertension in China: data from the China National Nutrition and Health Survey</td>
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</table>
Flagship studies

World’s largest study of type 2 diabetes treatments: The ADVANCE study

- More than 11,000 patients from 20 countries
- Showed blood pressure lowering reduced the risk of cardiovascular death by 18%
- Found intensive blood glucose control protects patients against serious kidney complications

ADVANCE results will have a major impact on the 400 million people living with diabetes worldwide and how they manage the condition.
Staffing

Senior research fellows  4
Post-docs  5
Research staff  15
International visitors  2
Research students  14

TOTAL  40

Research output

Peer-reviewed publications:
- Staff have a total of 769 publications
- 86 published in 2011
Division Research Themes

- Back Pain
- Contracture
- Ageing
- MSK Division
- Centre for Evidence-Based Physiotherapy
- Fitzroy

Back pain sub-themes

- Understanding the mechanisms of back pain
- Better management of back pain
- Identifying serious pathology in people with back pain
Prognosis for patients with chronic low back pain: inception cohort study

Lucida da C Menezes Costa, PhD candidate, 1 Christopher G Maher, director of division, 1 James H McAuley, research manager, 1 Mari J Hancock, lecturer, 2 Robert D Herbert, associate professor, 3 Kathryn M Refshauge, professor, 4 Nicholas Henschke, postdoctoral fellow.

Prevalence of and Screening for Serious Spinal Pathology in Patients Presenting to Primary Care Settings With Acute Low Back Pain

Nicholas Henschke, 1 Christopher G. Maher, 1 Kathryn M. Refshauge, 3 Robert D. Herbert, 4 Robert G. Cumming, 1 June Bleasel, 2 John York, 7 Anurima Das, 1 and James H. McAuley 1

Drugs for relief of pain in patients with sciatica: systematic review and meta-analysis

Rafael Zambelli Pinto PhD student, 4 Chris G Maher director, 1 Manuela L Ferreira research fellow, 1 Paulo H Ferreira senior lecturer, 2 Mark Hancock senior lecturer 2, Vinicius C Oliveira PhD student 4, Andrew J McLachlan professor 2, Bart Koes professor 6

1 George Institute for Global Health, University of Sydney, PO Box M201, Camperdown, Sydney, NSW 2050, Australia; 2 Discipline of Physiotherapy, Faculty of Health Sciences, University of Sydney, Sydney; 3 Faculty of Human Sciences, Macquarie University, Sydney; 4 Faculty of Health Sciences, University of Sydney, Sydney; 5 Faculty of Pharmacy, University of Sydney, Centre for Education and Research on Ageing, Concord Hospital, Sydney; 6 Department of General Practice, Erasmus MC, University Medical Centre, Rotterdam, Netherlands
EDITORIALS

Treating sciatica in the face of poor evidence
It may be necessary to extrapolate from evidence on treatment of other neuropathic pain syndromes

Roger Chou
associate professor of medicine
Department of Medicine and Department of Medical Informatics and Clinical Epidemiology, Oregon Health and Science University, Portland, OR 97225, USA

www.pedro.org.au
Growth physiotherapy evidence

Language of publication

% of records indexed on PEDro
Welcome to Physiotherapy Choices

Physiotherapy Choices is a database designed for use by consumers of physiotherapy services, including patients, their friends and families, health service managers, and insurers. The database provides a catalogue of the best research evidence of the effectiveness of physiotherapy interventions. Three sorts of research evidence are cataloged.
In 2011 PEDro was used to answer a clinical question every 18 seconds.
Fitzroy Crossing Projects

- “Yajilarra”
  - Aim: To tell the story of a group of indigenous women from the Fitzroy valley who successfully lobbied for an alcohol ban in their community

- Fetal Alcohol Spectrum Disorder
  - Aim: Establish prevalence of Fetal Alcohol Spectrum Disorder amongst 7 & 8 year olds in the Fitzroy Valley
Musculoskeletal Division

Time flies