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Writing implementation research grant proposals: 10 key ingredients....and a few reflections

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Materials adapted from

- a) **Enola Proctor** and Washington Univ. colleagues
- b) Univ. of Colorado School of Medicine **ACCORDS D&I Program**

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Session overview

- Challenges facing D&I
- Ten tips for D&I grant writing
- Additional reflections and recommendations
- Importance of working with program staff

Proctor et al. Writing implementation research grants. Implementation Sci. 2012 7:96

Brownson et al. Successful grant application writing. Clin Transl Sci. 2015 Dec;8(6):710-6.

<http://www.crispebooks.org/DIFundingTips>



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Challenges universal to all grant writers

How to successfully communicate:

- How your proposal is innovative and state of the science
- Why you and your team should be funded at this time
- That you can complete the study as proposed



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Additional challenges for implementation science researchers

- Rising scientific bar:
 - Science of implementation demands moving beyond documentation of barriers and facilitators
- Implementation research is **complex, contextual & complicated**
- Literature scattered across disciplines
- Implementation science is setting specific, but must advance generalizable science
- Addressing **both internal and external validity**

Brownson, Proctor, & Colditz. Dissem & Impl Research in Health. Oxford: 2017 (2nd ed.)
Glasgow et al. NIH approaches to D&I science. Am J Public Health. 2012;102:1274–1281.



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Most important



The Question



Aims and Approach



Talk with Program Officer



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Presuming a Compelling Question

**Ten Key Ingredients of a
Competitive D&I Grant Application**

(no application will have all 10)



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1. **Need for improvement....reducing gap between care that is and could be**

Contribution: Project's public health significance & impact

Important to demonstrate:

Poor health services or wide variation

Potential to improve care through proposed work

How?

SUCCINCT Literature review

Preliminary data



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2. Evidence-based intervention to be implemented

Demonstrate:

Strong **evidence*** of efficacy and/or effectiveness

Cochrane or other systematic review (ideally also pragmatism/PRECIIS)

Ready for implementation

How your proposal is different or contributes to what already known

How?

SUCCINCT Literature review

Preliminary data

**Mehta et al. Tyranny of evidence. In A. Plough (ed.). Knowledge to action. Oxford, 2017*



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3. Conceptual model/ theoretical framework

Selection and Contribution:

- **Why this model is applicable** (and not others)
- Innovation for implementation science
- Scientific impact & generalizable knowledge gain

Justifies key variables to be tested

How?

- Published papers using the model
- **Use the theory throughout proposal methods, measures, hypotheses, analyses!**

Tabak et al. *Models for dissemination and implementation research. Am J Prev Med.*
2012;43(3):337-50

Dissemination-implementation.org



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4. Stakeholder priorities, engagement in change & study

Contribution: Significance, impact, & feasibility of success.

- **Meaningful involvement THROUGHOUT and with MULTIPLE stakeholders**, at different levels (patients, staff, decision makers)

How?

- Preliminary data (qualitative, quantitative)
- Evidence of current and past partnerships (joint publications)
- Method details (partnered research)
- Letters- unique (not form letters) and from key decision makers



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5. Setting's readiness to adopt new intervention

Contribution:

- Scientific generalizability & impact
- Shows PI knowledge of study setting
- Minor caveat- if large scale (e.g., national) dissemination, may want to take settings with a 'range of readiness'

How to convey?

- Preliminary data
- Letters from specific organizations and national coordinating or professional organizations



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6. Implementation strategy/process

The observed/introduced change STRATEGY

Contribution:

- Public health significance
- Impact
- Feasibility- **address likely challenges**

How?

- Detail in planned approach- **differentiate impl. strategy vs. Interv.**
- Literature cited
- Preliminary studies
- Specify, provide manuals



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7. Team experience w/ setting, treatment, implementation

Contribution:

- Feasibility
- Capacity to complete study as proposed, including experience **addressing expertise, recruitment, diversity, attrition**

How?

- Build team, cite work
- Describe relevant experience in preliminary studies
- **Personalized** Biosketches, adequate budget justifications
- Personalized, unique letters of support



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8. Feasibility of proposed research design & methods

Value: Conveys-

- Feasibility of completing study as proposed
- Investigator capacity (understanding of unique D&I issues and challenges)
- **Balance of internal and external validity**

How?

- Detailed **“approach” section- save space for this!**
- Address choice junctures & contingencies
- Preliminary recruitment & enrollment data
- Letters (re: willingness to be randomized)



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9. Measurement and analysis detail

Contribution:

- Approach
- Feasibility of completing study as proposed
- Relates to theory; advances measurement science

How?

- Detailed measurement plan- **PRAGMATIC measures***
- Variation data and **well-justified power analysis**
- Unit of analysis specified & consistent
- **Specified** analyses that will exploit data and answer Q's

Glasgow & Riley. Pragmatic measures. Am J Prev Med 2013;45(2):237–243

Kroenke, Monohan & Kean Pragmatic charac.of PROs. J Clin Epidemiol. 2015; 68(9): 1085–92.



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10. Policy environment will leverage, support, sustain the change

Contribution:

- Public health significance and impact
- Sustainability
- Feasibility- including costs, resources and burden- to both participants and settings

How?

- Background **literature on adaptations and sustainability models and research**
- **'Fit' with changing context; feasible and sustainable in these settings**
- Letters with strong, specific commitment to continue
- Resources & Environment

Chambers, Glasgow & Stange. Dynamic sustainability framework. Implementation Science 2013, 8:117

Wiltsey Stirman et al. Sustainability syst. review. Implementation Science 2012, 7:17



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Can't fit it all in!

Relative importance in eyes of experienced reviewers?

**The Questions, the Aims, and Approach, Approach,
Approach**

Most essential:

- Background of Evidence based Tx to be implemented
- Methods and the team's experience with setting/Tx/ implementation strategies and process
- Research environment's capacity to support IR



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How to address these challenges?

- Make strategic use of all grant application parts...especially **Aims** and summary
- Draw on your experiences and **unique strengths**
 - pilot studies
 - work & research training experiences
- Caveat: Not every application can/should include equal detail on each component

Brownson. Video on aims. <https://www.youtube.com/watch?v=twKT2CL7Z6o>



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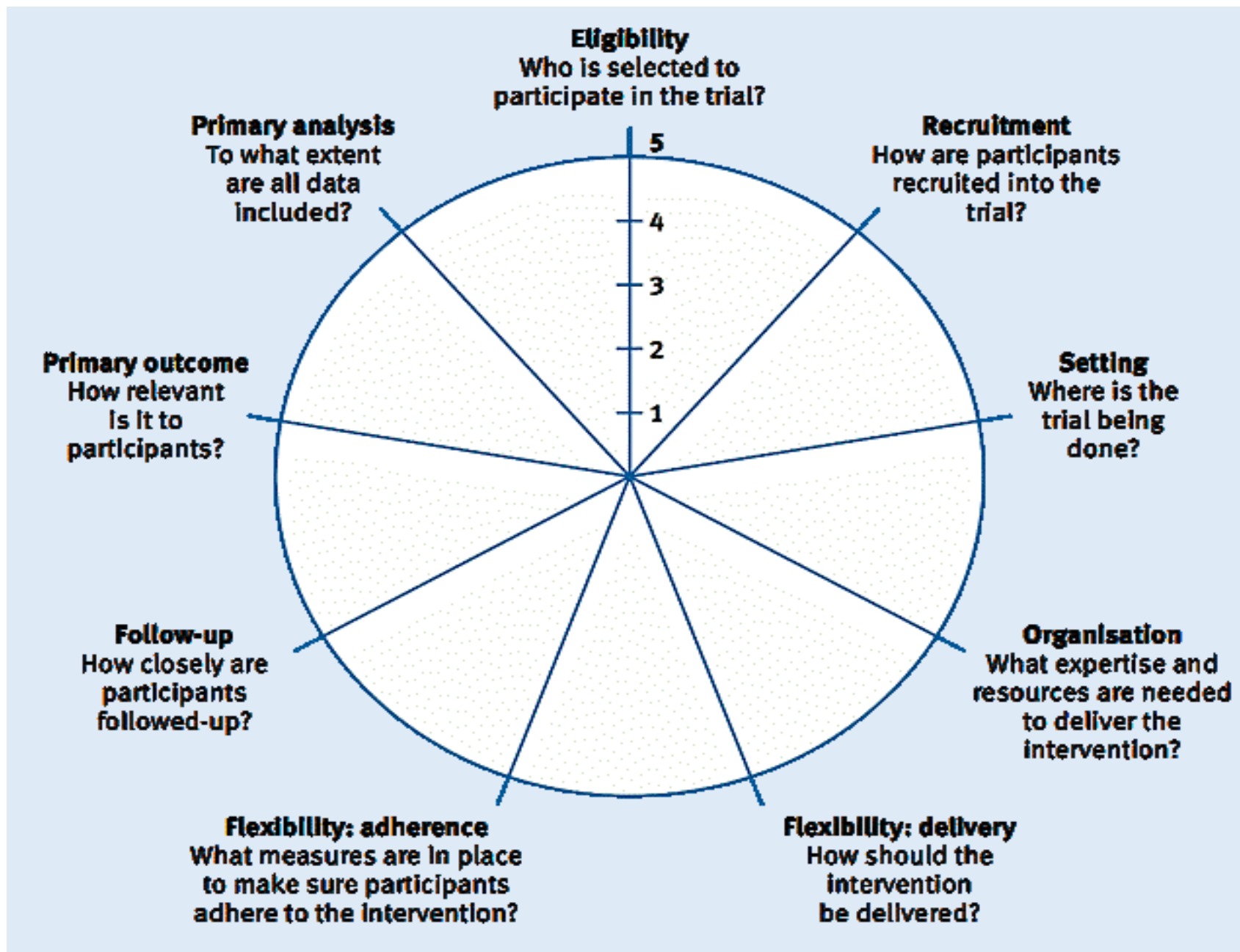
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Russ's Reflections and Biases

- **Work with your program officer-** contact multiple ones if needed
- Importance of **Aims and Abstract-** for both assignment and reviewers initial impression
- **Tables and Figures-** clarify and worth a lot of points
- Address tough decisions and weaknesses head-on
- Consider using *PRECIS-2 Figure*
- Consider using Standard Reporting for Research in Implementation (*StaRI*) *reporting criteria*

Loudon et al. (2015). *The PRECIS-2 tool: designing trials that are fit for purpose*. *BMJ*, 350, h2147.

Pinnock et al. *StaRI statement*. *BMJ Open*, doi:10.1136/bmjopen-2016-013318)





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StaRI Reporting Criteria

27 criteria- includes almost all CONSORT items PLUS:

Implementation Strategy	Implementation Outcome(s)
Logic Pathway	Harms and Unintended Consequences
Context and Representativeness	Context Changes
Fidelity	Adaptations*

Costs and Resources Used

Policy Implications

Pinnock et al. StaRI statement. BMJ Open, doi:10.1136/bmjopen-2016-013318)

**Chambers & Norton. The Adaptome. Am J Prev Med. 2016;51(4):S124– S131*



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- *Proctor et al. Writing IR grants. Implementation Sci 2012 7:96*
- *Brownson et al. Successful grant application writing. Clin Transl Sci. 2015 Dec;8(6):710-6.*

NIH Program Officers

Univ. of Colorado School of Medicine ACCORDS D&I team:

- <https://goo.gl/84ePnd>
- [**http://www.crispebooks.org/DIFundingTips**](http://www.crispebooks.org/DIFundingTips)

FOR A FAIR SELECTION
EVERYBODY HAS TO TAKE
THE SAME EXAM: PLEASE
CLIMB THAT TREE

