# THE STATISTICIAN AS PROJECT MANAGER: **STRATEGIES FOR SUCCESS & SERENITY**


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bit.ly/jlt-wsds2018 • @jent103

# LIFE OF AN ACADEMIC BIOSTATISTICIAN 🙋🏻‍♀️

Develop research question → Study design, analysis strategy → Data collection, cleaning, management → Descriptives, inference, prediction → Interpret, disseminate results

Statistician | Statistician | Statistician | Statistician | Statistician

Principal investigators

PIs(?)

*What does "missing" mean?*
*What happened when…?*

Clinical support team

Infrastructure team

PIs

# LIFE OF A CORPORATE DATA SCIENTIST

Develop business question → Develop analysis strategy → Data acquisition, cleaning, management → Descriptives, inference, prediction → Interpret, disseminate results; deploy, monitor models

Data scientist | Data scientist | Data scientist | Data scientist | Data scientist

Business stakeholders

Stakeholders (?)

*What does "missing" mean?*
*What happened when…?*

Domain teammates

Infrastructure team

Stakeholders

*when there is no project manager…*

# We become a project manager

# THIS HAS ADVANTAGES!

- Deeper project/domain knowledge
- Stronger relationships with teammates
- Better understanding of raw data
- These lead to stronger analysis, interpretation, communication
- Many of us enjoy it!

# …AND DRAWBACKS

- Project management is a **lot** of work…
- …which is not typically considered for career advancement
- Doing this well may actually hold us back, if it takes time from "promote-able" tasks & skills development

*Link: Tanya Reilly's excellent talk on "glue work"*

# strategies for success

*that have worked in my context* 🤞🏻

**YMMV**:
take what works, tweak what doesn't

# COMMUNICATION

## Regular team meetings

- Group discussion of goals, projects, timelines means everyone understands rationale
- Facilitates updates on roadblocks, successes
- Allows all team members to learn from each other

## Public list of priorities

- Trello board, Slack channel…
- Gives stakeholders a clear picture of when their projects will be addressed
- Facilitates conversation about shifting priorities as needed

# FOCUS 🔎

# KEEP THE MISSION IN MIND

What are your team's goals?

What projects/analyses will move you toward them?

Limit your to-do list to those projects!

# DEALING WITH (SCOPE) CREEPS

*Problem*:

**Scope creep** *(n, my version)*:

Project gets bigger and bigger without explicit intent 😈

*One solution*:

Use your project/statistical analysis plan as a tool 🛠️

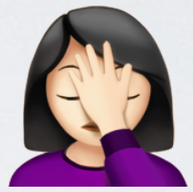
- Record original intent
- Document & version every change


- Additions/changes mean updating the version; this might be okay, but process forces you to think

# FOCUS *vs* AD HOC PROJECTS

## MONDAY

*"I'm going to work on this big clinical trial! It's going to be awesome!"*



## FRIDAY

*Spent my week on 18 revisions, bug fixes, "can you just tell me how many…"*

**Results**:

1. Group is only inching toward goals, rather than making major progress
2. I am slowly being driven mad

# FOCUS *vs* AD HOC PROJECTS


**Goal**:

Make progress on major work that moves us toward primary mission, while remaining responsive to also-important ad hoc requests

**Our specifics:**

- **Two** weeks working on major project
  *(eg, primary outcomes of clinical trial)*
- **One** week on smaller needs
  *(reviewer responses, bug fixes…)*
- Repeat! 🔄

**Results:**

- Major projects done more efficiently
- Smaller projects done in reasonable time frame, communicated well
- Everyone's needs handled
- I feel more satisfied with tasks & output

# PROCESSES ✅

# WHO MAKES DECISIONS?

Data scientist

Stakeholders

Additional stakeholders

Data engineers

Consulting data scientist

C-suite

# WHO IS…

## Task: Developing an SAP

**R** esponsible — Biostatistician — Research fellow

**A** ccountable — Biostatistician

**C** onsulted — Faculty mentor

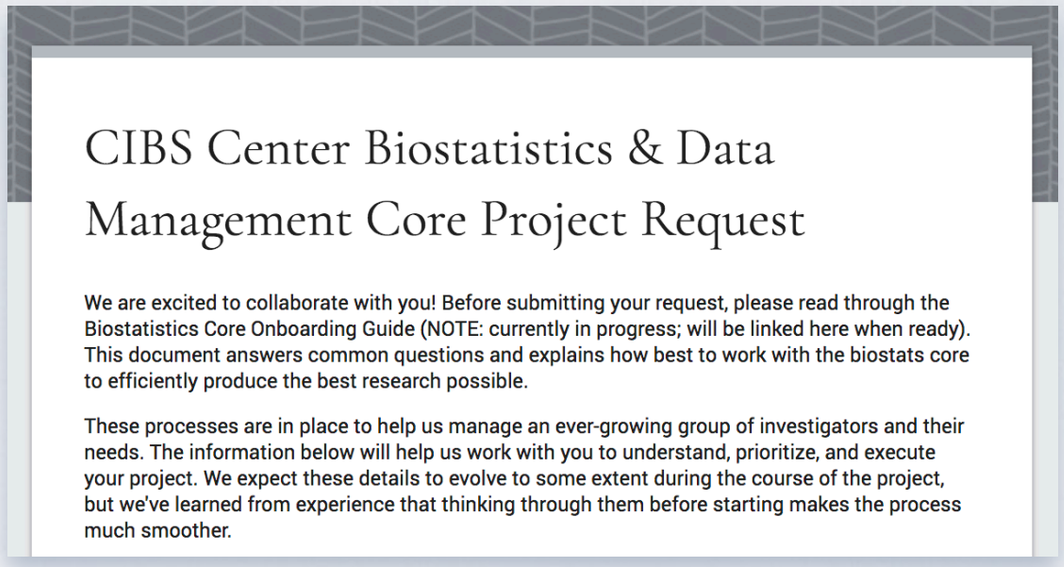
**I** nformed — Additional faculty, research coordinator, DB team

more:
bit.ly/dpm-raci

# DOCUMENTATION

Project request form for gathering initial info

- Goals for analysis
- **A**ccountable & **c**onsulted team members
- Logistics



CIBS Center Biostatistics & Data Management Core Project Request

We are excited to collaborate with you! Before submitting your request, please read through the Biostatistics Core Onboarding Guide (NOTE: currently in progress; will be linked here when ready). This document answers common questions and explains how best to work with the biostats core to efficiently produce the best research possible.

These processes are in place to help us manage an ever-growing group of investigators and their needs. The information below will help us work with you to understand, prioritize, and execute your project. We expect these details to evolve to some extent during the course of the project, but we've learned from experience that thinking through them before starting makes the process much smoother.

**In progress:** Onboarding docs for new team members

*Deadlines* ⏱ *What's already available?* 📝

*Funding source* 💸 *Target product* 🎯

*IRB permissions* 🔑 *Data source(s)* 💻

Potential roadblocks discussed *before* data work gets underway; clearer vision of decision-makers, end product, & value added

# SYSTEMIC CONSIDERATIONS

- Can we do a better job at **recognizing** these professional skills?
  *Relevant: Manisha Desai's WSDS2017 talk on recognizing team scientists in academia*
  - Varied career ladders - industry currently does this better than academia IMO
  - Update typical promotion criteria
  - Do *you* have ideas?

- Offset time spent on PM tasks by asking for **protected time** to either perform those tasks, or to focus on promote-able tasks
  *professional development, developing group infrastructure…*

- Are you a **manager/supervisor**? Do you see this happening? Step in!

- **Know what is valued** by your organization, your career path - and *yourself*

# ACKNOWLEDGEMENTS & RESOURCES


- VUMC Strategy & Innovation Office for project management training

- Jesse Mostipak & Sharla Gelfand for nonprofit & industry perspectives 👯


## Related reading!

Trey Causey on the data scientist as product manager

*(product != project, but many similar concepts)*

Tanya Reilly on "glue work" *(h/t to Sharla!)*

Roger Peng on balancing resources, analysts managing the flow of information