Project Management for Research Projects

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With thanks to Jason Boyd & Lynne Siemens
What we’re going to talk about today

- Project management explained
- Why project management (PM) in academia?
- Managing risk
- Integrating project management
- Defining and planning projects
- Teams and project charters
- Tools

Slides and resources available at http://libguides.ucalgary.ca/digitalprojects
What is a project?

- Relatively new or unknown undertaking
  - Involves uncertainty
  - Not regularly repeated
- Has a well-defined scope and objectives
- Has a definite life cycle (start and end)
- Involves coordination of multiple people, tasks, resources, and skills
- Crosses organizational boundaries
So what is Project Management?

A set of principles, methods, tools and techniques for the effective management of objectives-oriented work in the context of a specific and unique organizational environment.

PM Triangle/
Triple Constraint
Examples of projects in academia

- New collaborative research project
- Graduate student research or dissertation
- A conference (if you are on the organizing committee)
- Co-authored publication or book chapter
Why Project Management?

- Why consider a project management plan for academic projects?
  - Team members:
    - Research is increasingly collaborative/interdisciplinary
    - Some academic disciplines do not have a culture of team-based research
  - Funding agencies: Many research projects require funding (grants) which may involve timelines/expectations
Team members

- Team
  - Small set of individuals who work interdependently and are jointly accountable for performance goals
- Identifying team members
  - What skills are needed? (Technical, content, collaborative)
  - What individuals are needed/available?
- Differing roles and responsibilities
- Differing stakes
- Competing responsibilities and goals
- A project management strategy can provide a method to deal with these issues
Funding Agencies

- Grant applications may require
  - Work schedules
    - CIHR Foundation Grant: “Does the approach include a high-level description of how progress and success will be measured?” ([http://www.cihr-irsc.gc.ca/e/43632.html](http://www.cihr-irsc.gc.ca/e/43632.html))
  - Training of High Quality Personnel (HQP)
    - NSERC Discovery Grant: “The plan should describe the skills and knowledge that the trainees will acquire and the expected impact” ([http://www.nserc-crsng.gc.ca/_doc/Professors-Professeurs/FAQ_Evaluation_HQP_eng.pdf](http://www.nserc-crsng.gc.ca/_doc/Professors-Professeurs/FAQ_Evaluation_HQP_eng.pdf))
  - Formal governance structures to ensure management responsibility
  - Knowledge mobilization/translation plans (Tri Council)
    - CIHR Project Grant: “The ... knowledge translation... approaches, methods, and/or strategies should be well-defined and justified in terms of being appropriate to accomplish the objectives of the project.” ([http://www.cihr-irsc.gc.ca/e/49560.html](http://www.cihr-irsc.gc.ca/e/49560.html))
So What?

- If your project is going to involve a team (even if just you and your thesis committee)
- If you are going to apply for a grant ...

A project management plan will probably be very helpful
Project risks

- What are some of the risks that a PMP could address?
  - Timely completion
  - Scope creep
  - Budget mismanagement
  - Unanticipated obstacles/tasks
  - Team personnel changes
  - Conflicting schedules
  - Assignment of credit
The biggest risk in academia

- Your professional reputation
  - Networks
  - Collaboration opportunities
  - Funding agencies
  - Jobs
Integrating a PM structure into your research project

- Project conception stage
  - Think in terms of *process* rather than exclusively about *idea/product*
  - How will the work be done?
  - What are the tasks?
  - Who will do them?
  - When will they be done?
  - How will the team communicate and/or share work?
Integrating a PM structure into your research project

- Grant writing stage
  - Think about project management as an integral part of the research endeavor – not an add-on
  - Examine the RFP for PM-related language
  - Think about developing a project charter


We are interested in disseminating the results of this project as widely as possible, with credit to us for doing it.
We intend this work to move forward at a steady pace, given due awareness of the vagaries of life.
We would prefer for this work to be funded.
We understand that the work we do on this project may have future phases. Modifications and additions may be made to further the project by other members.
We wish to communicate in such a way as to preserve professional dignity.
We would like to foster goodwill among all the participants.

Integrating a PM structure into your research project

- **Implementation stage**
  - PMP should be a matter of discussion and mutual agreement
    - Research is collaborative, so should your PMP
    - Debate and revision is a positive thing
  - Establish a communications protocol to ensure ongoing dialogue about process/problems
  - Project milestones are helpful – reconvene entire project team for “check ins”
    - PMP should be nimble, able to respond to new developments
    - Position PMP as a tool to optimize team functionality/cohesion, not a bureaucratic burden
    - A way to model scholarly collaboration to colleagues/students
**Activity (5 mins)**

**Define your project**
- What is the issue to be addressed? (Define your project?)
- What is the project scope?
- What are the project objectives?
- What is the time frame?
- By what standard will you measure results?

*Sample project: cleaning your kitchen*
Cleaning the kitchen

Define your project

▪ My kitchen needs to be clean before my mother in law arrives.
▪ I only need to clean the kitchen. The bathroom and living room are out of scope.
▪ My objective is to ensure that my mother in law is comfortable in my home.
▪ I need to have the kitchen clean by 3:00 pm.
▪ I will measure success by the look on my mother in law’s face.
Project Planning: Model the work

- Breakdown the work structure
  - All tasks (goal, tasks, subtasks – use active verbs)
  - Checklist of activity and responsibility

- Balance the plan: can the project be accomplished?

- What can go wrong? What are the ‘Plan Bs’?

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<th>Planning Phase</th>
<th>Estimated time to complete task</th>
<th>Person responsible</th>
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Project Planning: Critical path analysis

- Critical path analysis
  - Any path of tasks where delays could impact the project
Project Planning: Gantt chart

- A gantt chart shows tasks and a time scale

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Working with your plan

- Tracking progress
  - Where are there differences?
  - Do these differences indicate a potential problem?
  - Is change recommended?

- Reporting progress
  - Where are we compared to where we want to be?
  - Use the work breakdown structure as a checklist
  - Use the gantt chart as a visual progress report
  - Who needs to know?
Activity (5 minutes)

Planning your project
- Work breakdown structure: identify all tasks (or at least as many as you can in 5 minutes)

Future work
- Network: how are tasks related/interdependent?
- Critical path analysis: which tasks are crucial to the overall timeline?
- Gantt chart: plot tasks against time
Cleaning the kitchen: work breakdown structure

- Put dirty dishes in dishwasher and run it
- Wash the pots and pans
- Empty the dishwasher
- Mop the floor
- Clean the oven
- Clear out old food from the fridge
- Wipe the counters
- Sweep the floor
- Empty trash
Work practices to support teams

- Supporting the team and its members
  - Ensure learning, satisfaction, and research outputs
  - Build trust and accountability across team members, distances, institutions, disciplines, time zones...

- Multiple communication channels
  - Formal/informal face-to-face meetings
  - Conference calls
  - Online project spaces

- Documented project plans with deliverables and timelines
- Project charters

- Signoffs indicate agreement
Tools to support a PM approach

- Consider what is needed given the project and team members’ needs
  - Geographical distribution
  - Frequency of contact

- Choose a tool and use it with discipline

- “Low tech”: white board, flip charts, markers, calendar, post-it notes

- “High tech”: too many to talk about and always changing
  - Online calendars, gantt charts, project spaces, file sharing...
  - Partial list at [http://libguides.ucalgary.ca/digitalprojects](http://libguides.ucalgary.ca/digitalprojects)
Thank you!

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