Project Management for Scientists

Schedule & Time Management

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Outline

- Progress Measurement
- Recap Balancing
- Project Overload

Progress Measurement

- Track progress to make sure we are on schedule
- Key to finishing on time (and budget) is to start out that way and stay on track
- Best project managers find problems early and solve them without overtime
- Progress measurement used to identify problems early
  - Problems are still small
  - Still time to catch up
- Progress measurement largely confined to schedule and budget

Measuring Schedule Performance

- Each work package is a measurable unit of progress
- more work packages → more accurate schedule progress
- Difficult to assess what part of a project is done
- 0-50-100 rule:
  - 0% complete: task has not begun
  - 50% complete: task has started, not finished
  - 100% complete: task is complete

Schedule Performance Issues

- Tasks really need to be all done do be completed
- Schedule performance measures accomplishment, not effort expended
- Do not focus on critical path alone; otherwise resource crisis towards end of project
- Many similar tasks: using number of tasks completed may not be a good measure of progress as this does not differentiate between easy and difficult tasks
- Can use costs to measure schedule performance

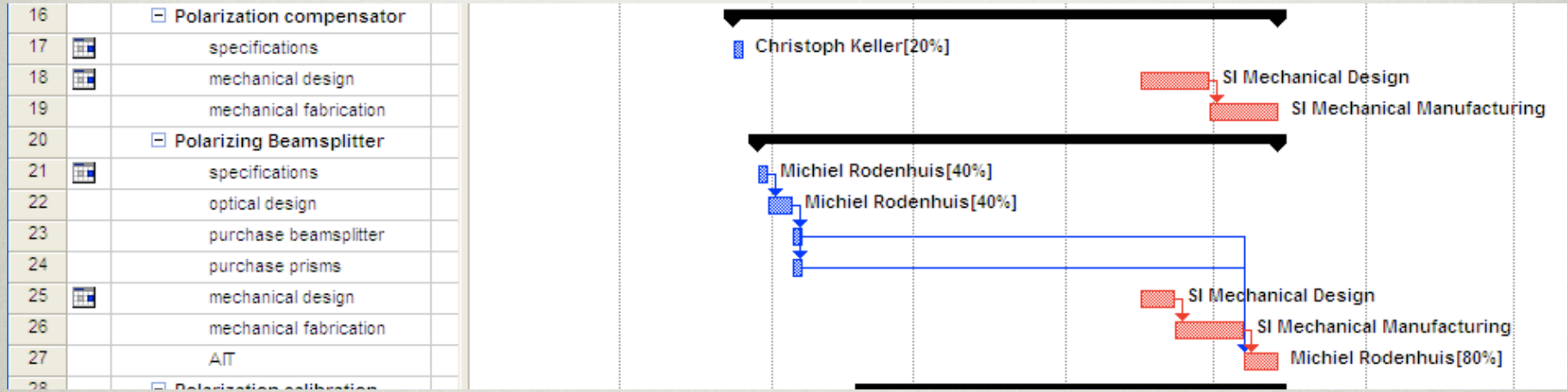
Project Management Triangle

- Scope = science requirements, performance
- Resources = cost, budget
- Time (to completion) = schedule

One side cannot be changed without affecting the others!

Critical Path

- Consecutive tasks where delay in any of those tasks delays project as a whole
- Typically shown in red in Gantt chart software



Balancing at Project Level

- Reestimate Project
- Change Task Assignments
- Add People to Project
- Increase Productivity
- Outsource
- Overtime

Project Overload

Giving structure to a problem is half the solution.

1. List all projects
2. Identify next step for each project
3. Find the quick hits
4. Prioritize the remaining steps
5. Schedule your time weekly, display workload

1. List All Projects

- Identify current workload
- Worksheet for each project (high-level view):
  - Project name
  - My role
  - Priority
  - Project phase: Initiate, Plan, Control, Close
- At most 5 projects
- 80-20 rule: 20% of projects take 80% of time
- Display all these projects together

2. Identify Next Steps

- Use (high-level) WBS for each project
- Identify next step in each project
- Only looking at next steps can reduce overload to manageable amount of work
- Work that has not been started yet can be imagined as huge workload
- By organizing and seeing what is next, tasks become visible in their real size and challenge

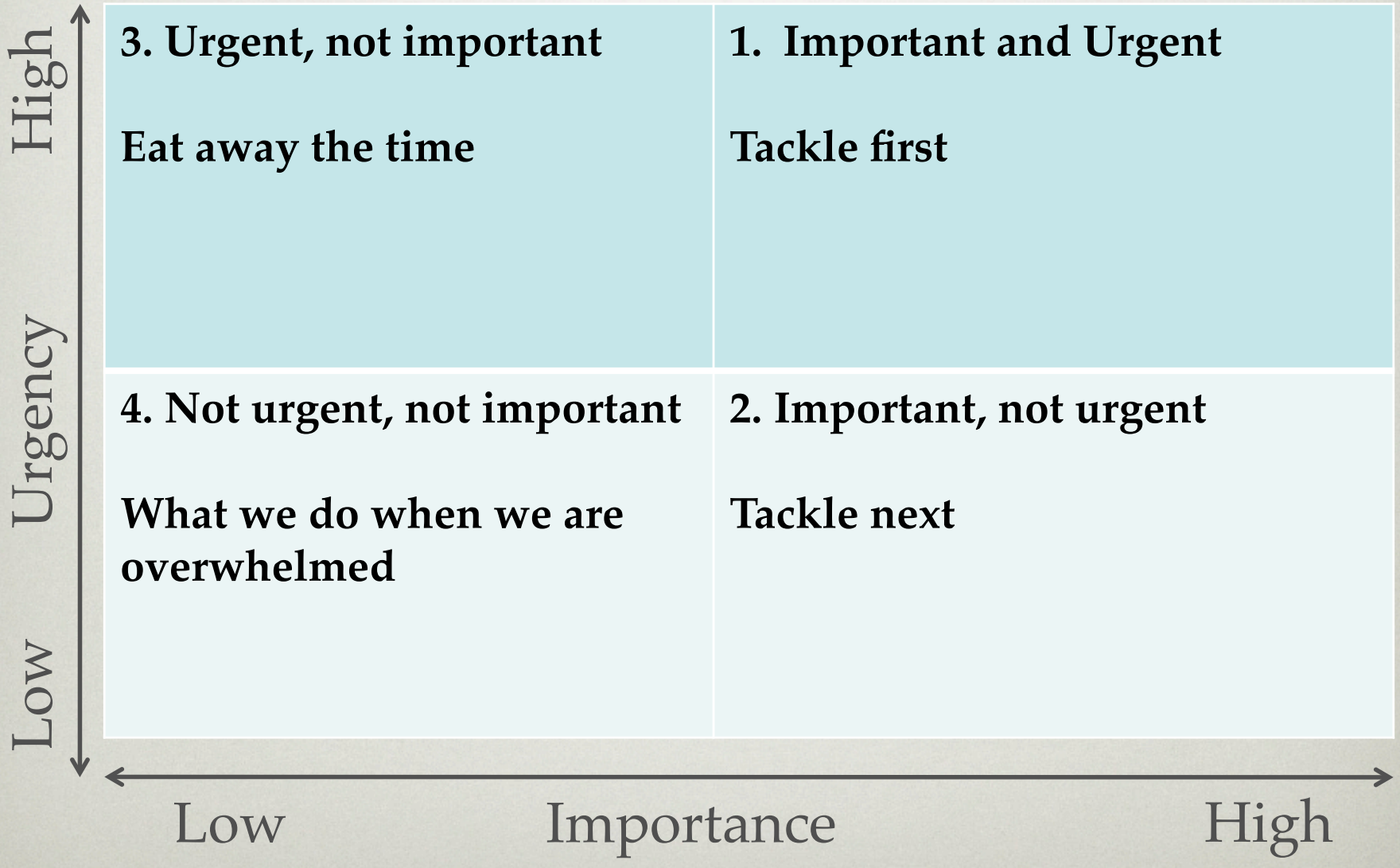
3. Find the Quick Hits

- Identify steps that result in most immediate gain
- What are the 20% of (next) tasks give an immediate, substantial boost in gaining control of overload?
- Top of the list if yes to the following questions:
  1. Will small investment of time keep project moving?
  2. Is project near closure?
  3. Stalled because decision or clarity is needed?

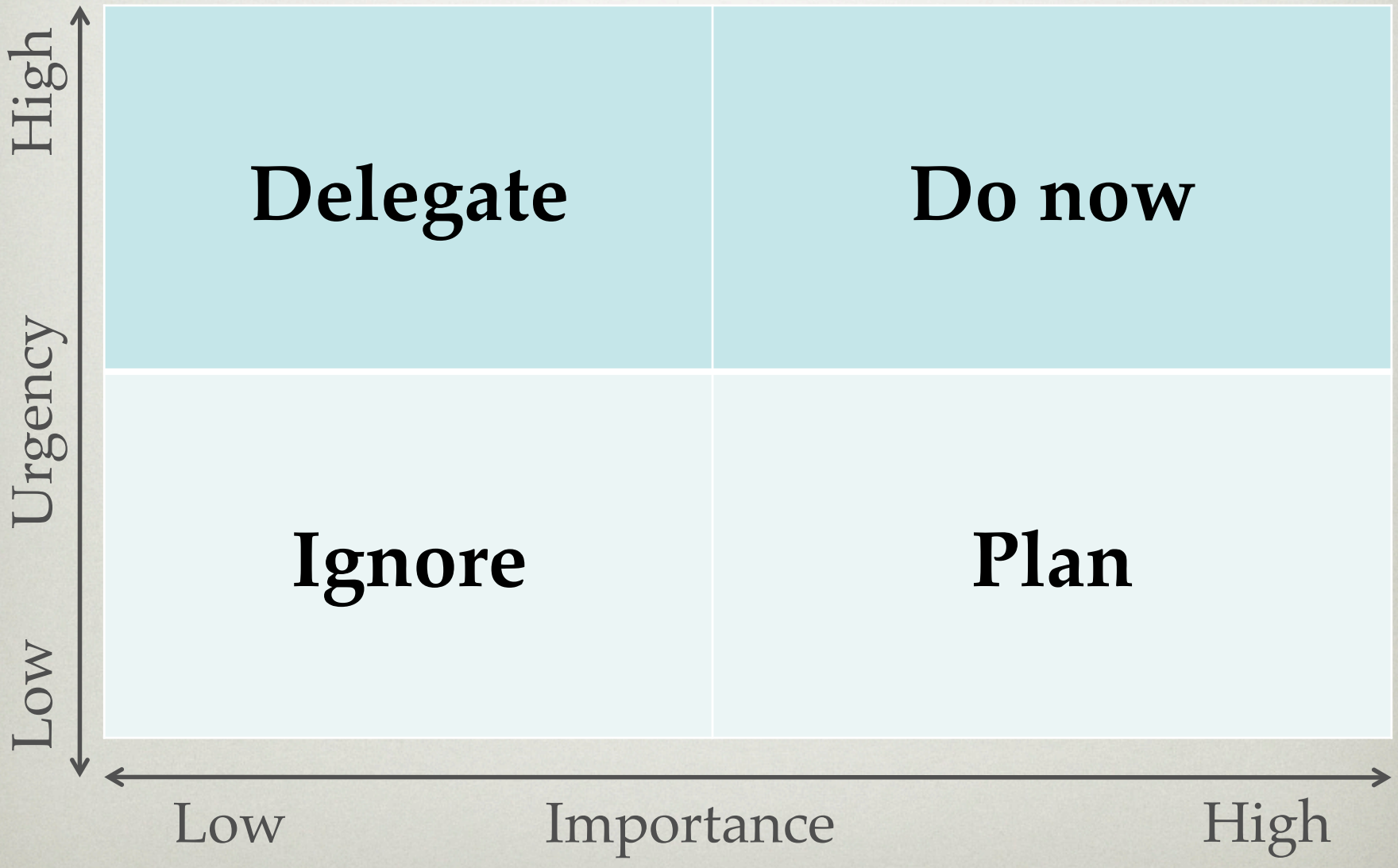
4. Prioritize Remaining Steps

- After taking care of quick hits (lots of improvement)
- Any steps that can be eliminated, put on back burner?
- Any steps that are urgent and important?

Urgency – Importance Matrix



Urgency – Importance Matrix



5. Schedule Time Weekly

- Put all steps in prioritized order
- Display workload to have rational discussions about overload
- Schedule work
- Add contingency time to catch up from unexpected problems
- Add non-project work to calendar

7 Habits

The Seven Habits Highly Effective People Covey (1989)

1. Be proactive, take responsibility for every aspect of your life
2. Develop long-term goals, visions
3. Prioritize work aimed at short-term goals, at the expense of tasks that are very important
4. Seek mutually beneficial solutions
5. Give advice only after having empathetically understood a person and their situation
6. Team work: effective problem solving, collaborative decision making, valuing differences, building on divergent strengths, leveraging creative collaboration, embrace and leverage innovation: synergy as a habit
7. Engage in recreational activities, sharpen the mind

Getting Things Done

Getting Things Done (Allen 2001)

"Get everything out of your head. Make decisions about actions required on stuff when it shows up — not when it blows up. Organize reminders of your projects and the next actions on them in appropriate categories. Keep your system current, complete, and reviewed sufficiently to trust your intuitive choices about what you're doing (and not doing) at any time."

Getting Things Done (cont.)

- Workflow: 1. Collect, 2. Process, 3. Organize, 4. Review, 5. Do
- Levels of focus: 1. Current actions, 2. Current projects, 3. Areas of responsibility, 4. Yearly goals, 5. 5-year vision, 6. Life goals
- Natural planning: 1. Defining the purpose and principles, 2. Envisioning the outcome, 3. Brainstorming, 4. Organizing, 5. Identifying next actions