

PROJECT MANAGEMENT FOR SCIENTISTS

INTRODUCTION TO THE COURSE

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OUTLINE

- Course Content
- Web Page
- Mandatory Book and Lecture Copies
- Schedule and Requirements
- Exams and Grades
- Lecture Overview

MY COURSE GOAL

Teach science Master and PhD students how to take scientific ideas from initial visions to successfully funded projects by applying basic project management approaches.

This course will help you to become a more successful scientist by adequately organizing scientific ideas and projects including your own Master's and PhD theses.

PEOPLE

- Christoph Keller, UU, Prof. of Experimental Astrophysics
- Helena Becher, PhD student, Experimental Astrophysics
- Guest lectures by:
 - Karen Galindo, Grant Writer
 - Roland Stark, NWO
 - Pieter Thijssen, UU, Project Controller
 - Wilfried Boland, UL, NOVA Executive Director

COMMUNICATION

- Blackboard
 - Students sign up themselves
 - Everybody else provide solis-ID and will be signed up on Blackboard only
- Email: C.U.Keller@uu.nl, H.M.Becher@uu.nl
- Course web page:
www.astro.uu.nl/~keller/Teaching/PMSci_2009/

BOOK



- The Fast Forward MBA in Project Management, **Third Edition**
- By Eric Verzuh
- Published by John Wiley and Sons Ltd
- Available at bookstores, bol.com
- Selected chapters, reference
- Lectures, exercises available online

COURSE SCHEDULE

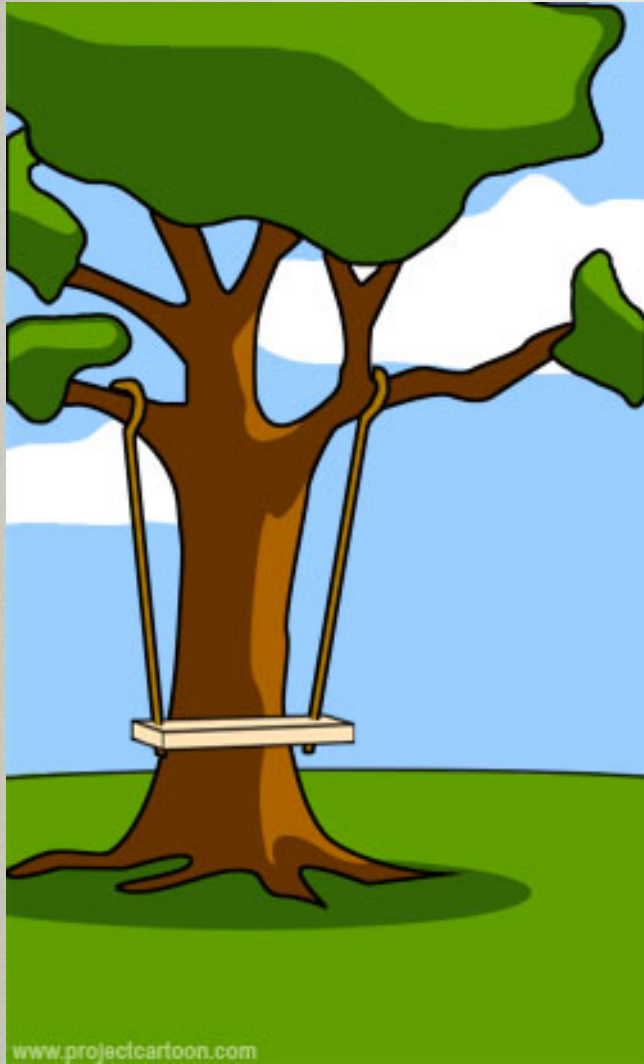
Day	Time	Room	Type
Monday	15:15-17:00	BBL 412	Exercises
Tuesday	09:00-10:45	BBL 768	Lecture
Tuesday	11:00-12:45	BBL 412	Exercises
Thursday	13:15-15:00	BBL 768	Lecture
Thursday	15:15-17:00	BBL 412	Exercises

COURSE REQUIREMENTS

- Exercises are integral part of course (some are more important than others for PhD students)
- Computer and paper exercises
- Home work and some exercises have to be submitted by deadline
- Submitted work will be checked and / or discussed
- Exercise solutions will not be made available in writing or online

EXAMS AND GRADES

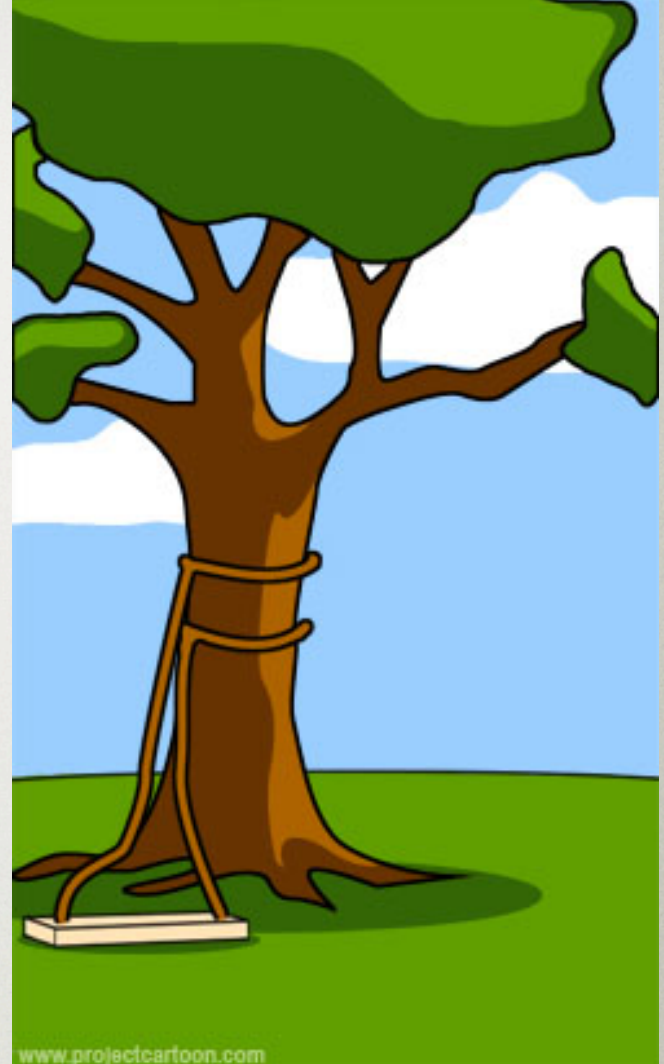
- Relevant documents for open-book exam
 - Lectures, corresponding parts of book
 - Exercises and home work
- Written exam after course, oral exams after that
- Grade composition
 - 20% home work
 - 20% exerciseses
 - 60% exam



What the scientist
needed



How the scientist
described it to another
scientist



What the engineer
thought that the
scientist described



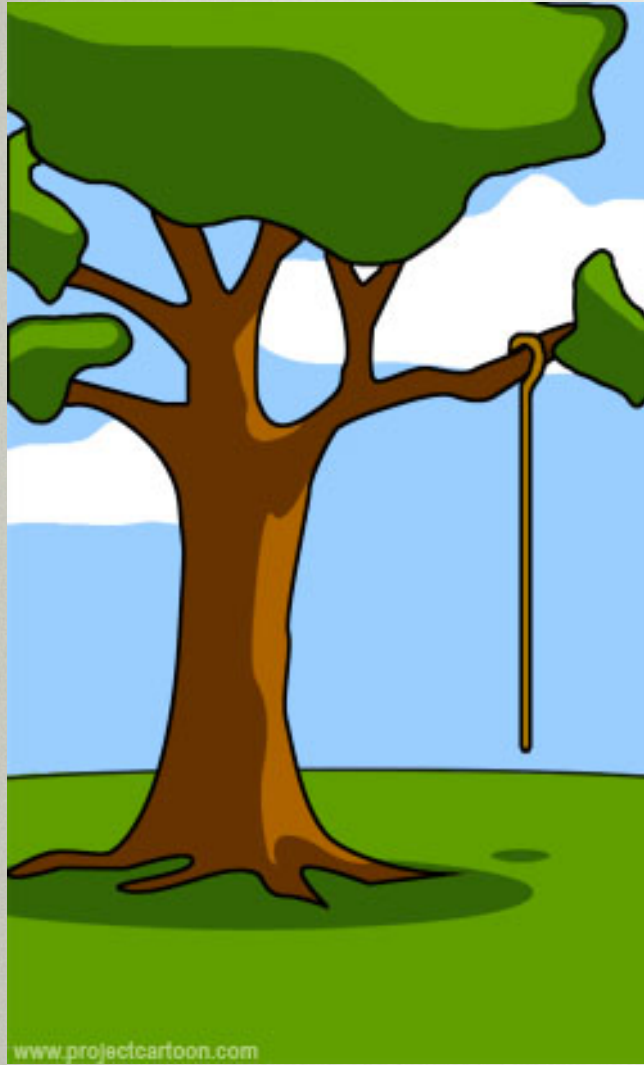
What the proposal
promised



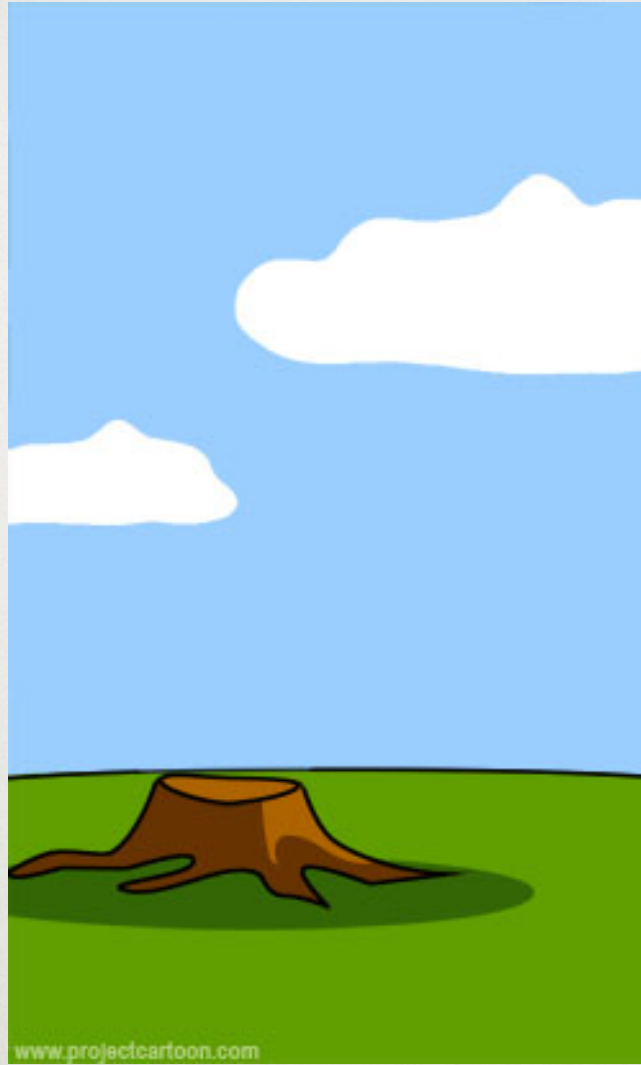
What the reviewer
understood



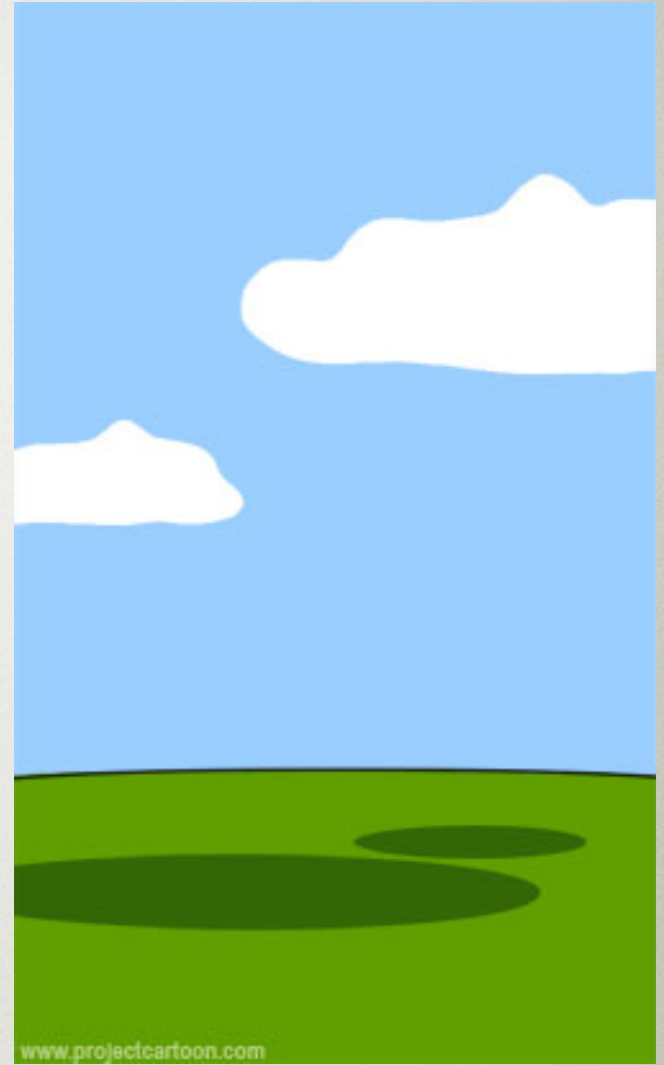
What the funding
agency was hoping for



What university
management was
hoping for



How university
management supported
it



How the project was
documented



When it was delivered



What the scientist really
wanted

SCIENTIFIC PROJECTS

- Projects vs. operations
- Cost - Schedule – Performance
- Project Lifecycle
- Commissioning and operations
- Lessons learned
- Project selection
- Just enough project management
- Examples of own projects

SCIENTIFIC VISION AND STRATEGY

- Visions, Strategy, and Tactics
- Scientific Visions
- Vision requirements
- Strategic thinking and planning
- Strategic Analysis (SWOT)
- Strategic Goals (SMART)

PROJECT DEFINITION

- Stakeholders
- Science requirements
- Project team
- Project rules
- Statement of work
- Responsibilities and authorities

SCIENTIFIC REQUIREMENTS

- Defining the science scope
- Requirements vs design limitations
- Prioritization
- Top-level requirements

PROPOSAL PLANNING AND ORGANIZATION

- Proposal itself is a project
- Science
- Technical
- Management

WORK BREAKDOWN STRUCTURE

- The whole is more than the sum of its parts
- Top-down approach
- Bottom-up approach

COST AND SCHEDULE ESTIMATES

- Historical data
- Top-down estimates
- Bottom-up estimates

PROPOSAL WRITING

- Match between call for proposal and scientific idea
- Follow the proposal guidelines
- Affirmative language use

TEAM FORMATION AND HIRING

- team formation
- Skill granularity
- Writing CV and applying for a job
- Hiring and interviewing

PROJECT ORGANIZATION AND CONTROL

- Resource allocation
- Change management
- Decision forming processes
- Measuring progress
- Balancing
- International consortia organization etc.

ACCOUNTING AND COST CONTROL

- Basic accounting
- Cost analysis and control
- Contracts and contract management

SCHEDULE AND TIME MANAGEMENT

- Schedule analysis
- Task dependences
- Critical path analysis
- Own time management

RISK MANAGEMENT

- Risk takers and worriers
- Risk analysis
- Risk mitigation
- Risk management
- Contingencies

PROJECT MANAGEMENT TOOLS

- Spreadsheets
- Open Proj
- Microsoft Project

COMMUNICATION

- How to delegate / command
- Effective communication
- Meeting organization
- Documentation / project library / whitebook
- Reporting

TYPICAL PROJECT PROBLEMS

- Problem solving
- Conflict management
- Authority - responsibility mismatch
- Personnel issues
- Politics
- Scope creep