From PhD student to PhD supervisor to research manager

Atelier gestion de projet

Réseau Canadien de l'eau

Québec

16 04 2009

Peter VANROLLEGHEM

UNIVERSITÉ LAVAL

modelEAU

Outline

- Three types of people involved in PhD study
- Where do I come from?
- Typical PhD project management
  - Belgium
  - Québec
- Research management
- Self-evaluation as PhD supervisor
- Conclusions

Three types of people

- PhD student
- PhD student supervisor
- Research Manager at University

Three types of people: Goals

- PhD student
  - Get a PhD
  - Become the best in your discipline
  - Let people know you're the best (Sales speech)
    - Write about your work (journals, proceedings)
    - Present your work (seminars, conferences, workshops)
- PhD student supervisor
- Research Manager at University

Three types of people: Goals

- PhD student
- PhD student supervisor
  - Help a person to become the best in your discipline
  - Pass on your expertise and have it developed
  - Get your ideas worked out
  - Get recognition by sales speeches by the student
  - Train a person as future independent researcher
- Research Manager at University

Three types of people: Goals

- PhD student
- PhD student supervisor
- Research Manager at University
  - Create a productive group (MSc, PhD, Post-docs)
  - Search for synergies within the group that maximise output (MSc, PhD, papers,…)
  - Create organisational structure supporting the group
  - Work on Public Relations
    - Website
    - Conference organisation

Where do I come from?

UNIVERSITEIT GENT

UNIVERSITÉ LAVAL

modelEAU

Where do I come from?

- 1982-1987: Bio-engineer Ghent University, 1987
- 1987-1990: First PhD study at Catholic Univ. Louvain
- 1990-1994: Second PhD study at Ghent University
- 1994-1995: Post-doctoral researcher, Delft, Netherlands
- 1995-1997: Post-doctoral researcher, Ghent University
- 1997-2006: Professor, Ghent University
- 2006- … : Professor, Université Laval

UNIVERSITÉ LAVAL

modelEAU

Where do I come from?

- First PhD study (1987-1990)
  - Supervisor: Jan Spriet
  - Mental problems → departure 1990
  - One PhD student, one supervisor
  - Very close supervision (work together)
  - Lots of technical training (sharing expertise)
  - All 3 PhD students in the group are now professor with excellent scientific records

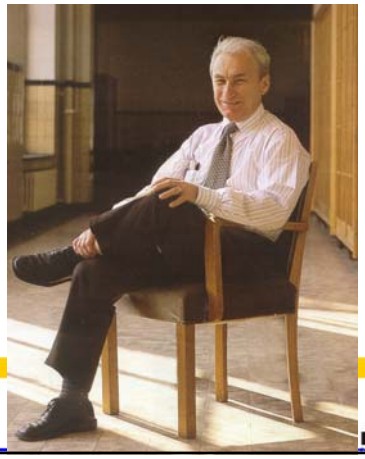
UNIVERSITÉ LAVAL

9

modelEAU

Where do I come from?

- Second PhD study (1990-1994)
  - Willy Verstraete « Mister Environnement in BE »



LabMET

UNIVERSITÉ LAVAL

modelEAU

Where do I come from?

- Second PhD study (1990-1994)
  - Willy Verstraete « Mister Environnement in BE »

UNIVERSITÉ LAVAL

Where do I come from?

- Second PhD study (1990-1994)
  - Willy Verstraete (« Mister Environnement »)
  - Research manager
  - 30 PhD students, one supervisor
  - Very loose supervision (brainstorms, freedom)
  - Little technical training (share w/ other PhD students)
  - Group building
  - Stimulus to go elsewhere and learn/present
  - Super scientific output (papers, PhD's)

UNIVERSITÉ LAVAL

12

Where do I come from?

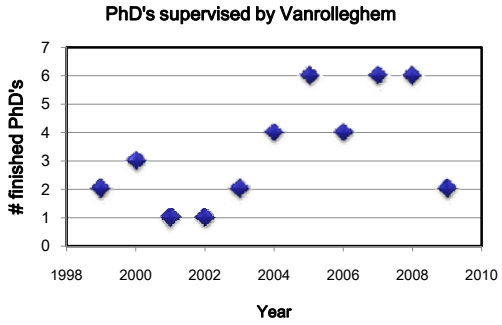
- Second PhD study (1990-1994)
  - Paid on project (2 x 2 years)
  - PhD study on different subject, in parallel
    reuse of what I learned in first PhD study
  - Learn about :
    - Self-organisation
    - Student supervision (MSc, PhD)
    - Project and Group management
    - Interaction with funding agencies (write proposals)
    - Interaction with industry (convince you're worth investing in)
    - Networking within scientific community (prof. organisations)

Where do I come from?

- 1994-1997 Postdoc (Delft – Ghent)
  - Learn new things in other environment
  - Publication output (most productive time)
  - Research management
  - Supervision of students
  - Project writing
  - Teaching
  - Service to the community
  - Extend networking (industry, scientific community)

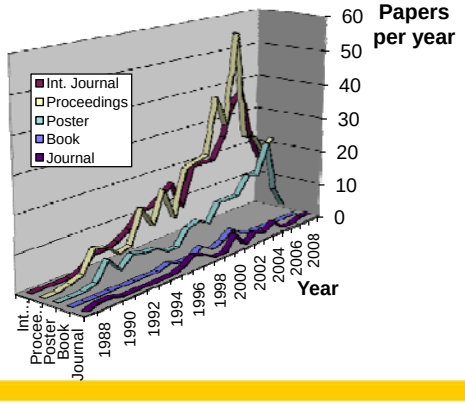
Where do I come from?

- 1997-2006 Development of BIOMATH team



Where do I come from?

- 1997-2006 Development of BIOMATH team



Where do I come from?

- 1997-2006 Development of BIOMATH team

UNIVERSITÉ LAVAL

modelEAU

Where do I come from?

- 1997-2006 Development of BIOMATH team

UNIVERSITÉ LAVAL

modelEAU

Where do I come from?

- 2006 - … :Development model*EAU*
  - June 2006:

UNIVERSITÉ LAVAL

19

modelEAU

Where do I come from?

- 2006 - … Development model*EAU*
  - February 2008:

UNIVERSITÉ LAVAL

20

modelEAU

Outline

- Three types of people involved in PhD study
- Where do I come from?
- Typical PhD project management
  - Belgium
  - Québec
- Research management
- Self-evaluation as PhD supervisor
- Conclusions

PhD project management: General

- Project funding
  - Planning/Deliverables are fixed upfront
  - Interesting research lines cannot be pursued
  - Deliver! → Stress!
- Scholarship funding
  - Research direction is fixed, preliminary planning
  - Interesting research lines can be pursued
  - Freedom! → Uncertainty → Stress!

PhD project management: General

- Important elements:
  - Selection of PhD student
    - Personal qualities (hobbies)
    - Technical competences (grades)
    - Motivation (interview)
  - Find the topic that fits the student
    - Past experience (studies, lab work, computer work, …)
    - What is the student's career goal?
    - Interests?
    - Goals of the research team…

PhD project management: General

- Action list:
  - Discover the field (literature review) – writing it up!
  - Argue the problem statement
  - Define objectives
  - Develop research methodology
  - Make a planning (Gantt chart, with dependencies)
  - …
  - …
  - Get a PhD!

PhD project management: Belgium

- Topic decided upfront
  - Project funding
  - Scholarship funding (1 month to write proposal)
- No courses
- No intermediate evaluation
  - Project deliverables
  - Conference deadlines
  - Supervisor demands for:
    - Intermediate reports
    - Papers in peer reviewed journals

PhD project management: Quebec

- PhD topic is defined in first year (oral exam)
- Courses (one session)
- Courses (written exam)
- Intermediate evaluation
  - Project deliverables
  - Conference deadlines
  - Supervisor demands for:
    - Intermediate reports
    - Papers in peer reviewed journals
  - Two seminars (!)

Outline

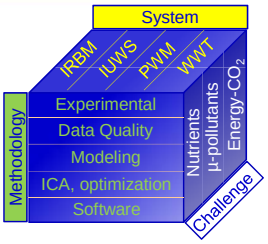
- Three types of people involved in PhD study
- Where do I come from?
- Typical PhD project management
  - Belgium
  - Québec
- Research management
- Self-evaluation as PhD supervisor
- Conclusions

Research Management: BIOMATH

- Flat structure until 2004 (Verstraete-style)
- Post-docs were hired to support PVR
- In 2006: 6 SubGroups (application-oriented)
  - Biodegradation
  - Separation
  - Water Quality
  - Food technology
  - Metabolic modelling
  - Software development
- Problem: Post-docs stay only 2 years

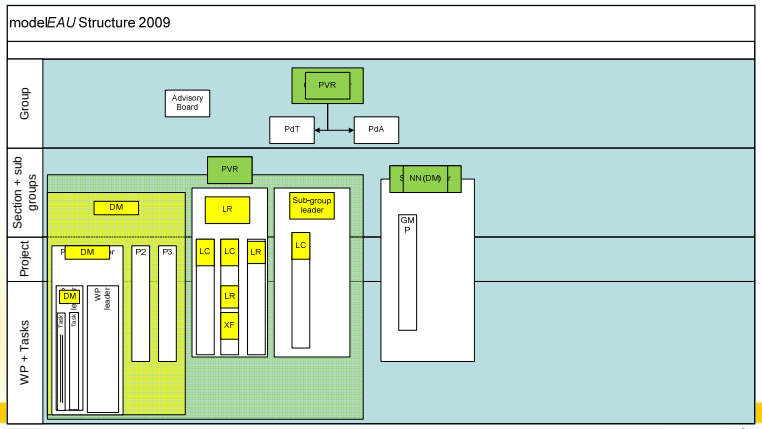
Research Management: model*EAU*

- Group structure
  - model*EAU* Group
  - SubGroup (method oriented!)
  - Project
  - Workpackages and tasks
  - Supporting committees (lab, SysAdmin, PR, …)
- Relies on long-term perspective for post-docs, research assistants



Research Management: model*EAU*

- Group structure



Research Management: General

- Group building
  - Weekly internal Seminars: caf*EAU*
  - Daily coffee/Lunch together
  - New Year's dinner

UNIVERSITÉ LAVAL

modelEAU

Dernière acétate

Comment était ma présentation?

D'abord l' impression du présentateur

contenu
- approprié pour l'auditoire?
- informations, nouvelles
- Qu'est-ce qui a été passionnant ou ennuyant ?
- discussion

structure
- début, fin
- structure claire
- message
- répartition du temps
- acétates

expression
- débit
- gestes, posture
- contact visuel

UNIVERSITÉ LAVAL

32

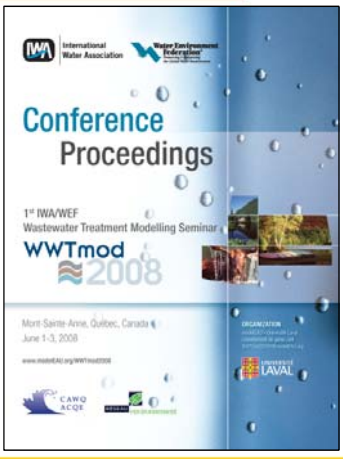
modelEAU

Research Management: General

- Group building
  - Weekly internal Seminars: caf*EAU*
  - Daily coffee/Lunch together
  - New Year's dinner
  - Excursion
  - Sports (squash)
  - Choose the right people!
  - Open atmosphere
  - Stimulate collaboration

Research Management: General

- Group building:
  - Conference organization



Research Management: General

- Group building:
  - Create a New Year's card together and send it out

Self-evaluation as supervisor

- Enthusiasm
- People selection
- Brainstormer (too many ideas)
- Can't say no (6 PhD's is max.)
- Improving writing & presentation skills

- Not organized to regularly meet stud.
- Brainstormer (too many ideas)
- Can't say no (6 PhD's is max.)