



Lab Course / Praktikum: *Project Management and Software Development for Medical Applications*

Presentation Tips and Rules – 02/11/2020
Winter Term 2020/21

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The Presentation!



The presentation is a support for your talk.

The presentation has to be clear, in structure and in layout.

The presentation has to be visually pleasant.





Project Management and System Development

The title of your project

Session Name – Date

Project Supervisor: his/her name

Presented by: your name

Outline

Introduction

Methods and Materials

Results

Discussion



Outline

Introduction

Methods and Materials

Results

Discussion



Outline

Introduction

Methods and Materials

Results

Discussion

This should be the structure of any scientific presentation.

There is no need to remind your audience that you are going to do the obvious!



Bad Ideas of Slide Design 1

It is a good idea to write out everything you want to say at some point
Even if you do not have time to say it, write it!

Every slide needs figures
Even if you do not explain them
Even if they are too small to be understandable

Just in case: We are being sarcastic here!





Some Examples...

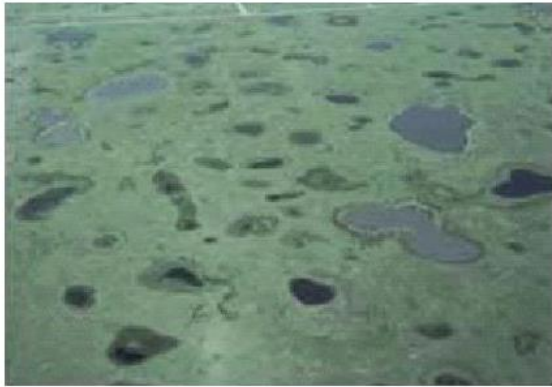


Ecological Significance of the Prairie

Pothole Region

The Prairie Pothole region (PPR) is the northernmost extension of the Great Plains.

Glacial scouring has resulted in a multitude of relatively small ponds and wetland areas, which are controlled by key aspects of the hydrologic cycle.



Wetlands act as buffers to hold excess water in flood conditions.

The PPR is recognized as the nesting area for the majority of the ducks that breed in the continental US

The PPR is also a migration resting point for waterfowl transiting to and from Northern Canada.

Major commercial uses of the PPR include crop agriculture and cattle ranching.



Bad Ideas of Slide Design 2

It is a good idea to write out everything you want to say at some point
Even if you do not have time to say it, write it!

Every slide needs figures
Even if you do not explain them
Even if they are too small to be understandable

You absolutely need to put as much information on a slide as possible
If there is not a bullet or dash in front of each line, structure is not visible
It does not matter to have many points
It shows that you think in complex ways
Items can also appear one after the next
This is particularly important if you do not want people to guess what is happening!

Just in case: We are being sarcastic here!



Use a clear design!

Slide titles should have a message

Restrict to writing key messages

There is no need to use explicit bullets

- Structure is visible through alignment and font size
- Key messages do not need many levels of indentation

A slide is complete even without a figure!



Errors of Typography

Fancy fonts will rejoice everyone (btw. Comic Sans is an awesome font)

Using background colours makes your life more colourful

Combining colours confirms your creativity

Just in case: We are being sarcastic here!



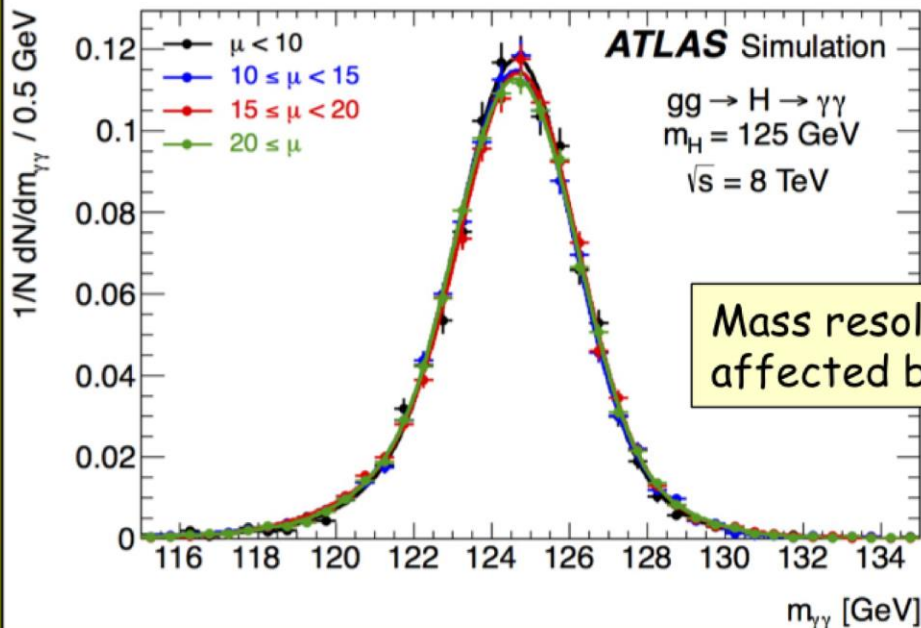
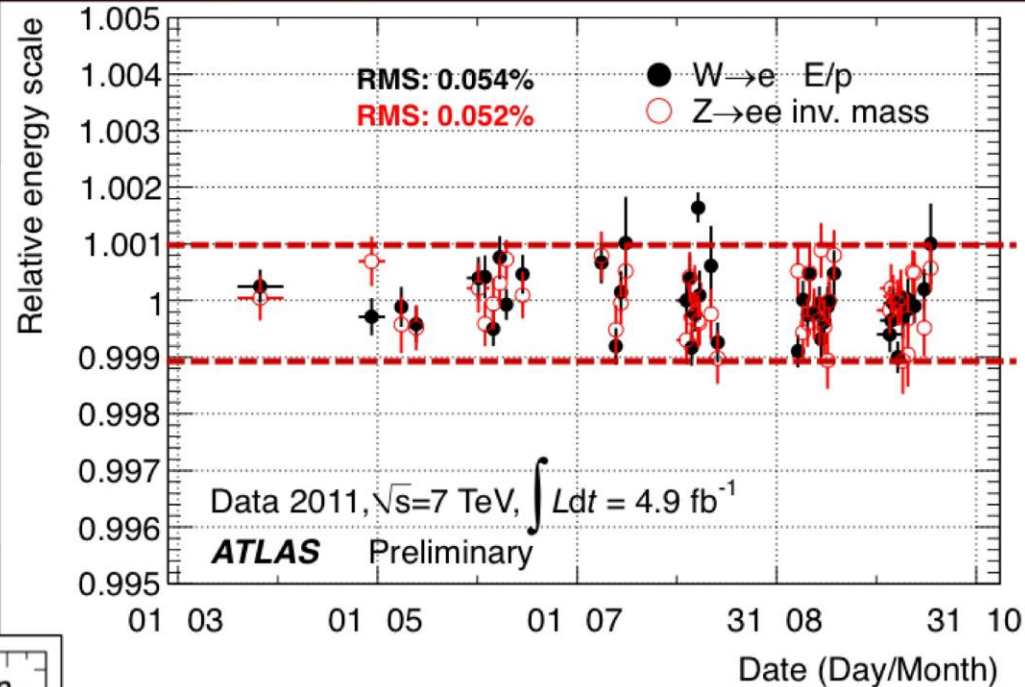
Mass resolution

$$m_{\gamma\gamma}^2 = 2(E_1 E_2 (1 - \cos\alpha))$$

Present understanding of calorimeter E response (from Z, J/ψ → ee, W → ev data and MC):

- E-scale at m_Z known to ~ 0.3%
- Linearity better than 1% (few-100 GeV)
- "Uniformity" (constant term of resolution): ~ 1% (2.5% for $1.37 < |\eta| < 1.8$)

Stability of EM calorimeter response vs time (and pile-up) during full 2011 run better than 0.1%



Mass resolution not affected by pile-up

Electron scale transported to photons using MC (small systematics from material effects)

Mass resolution of inclusive sample: 1.6 GeV
Fraction of events in $\pm 2\sigma$: ~90%

Keep typography simple

Select a pleasant font – TUM Neue Helvetica, for example

Stick to only one font throughout the document

Limit the number of variations!

Slide title: 24

Main point: 18

Minor point: 14

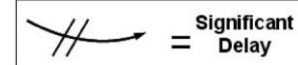
References: 8



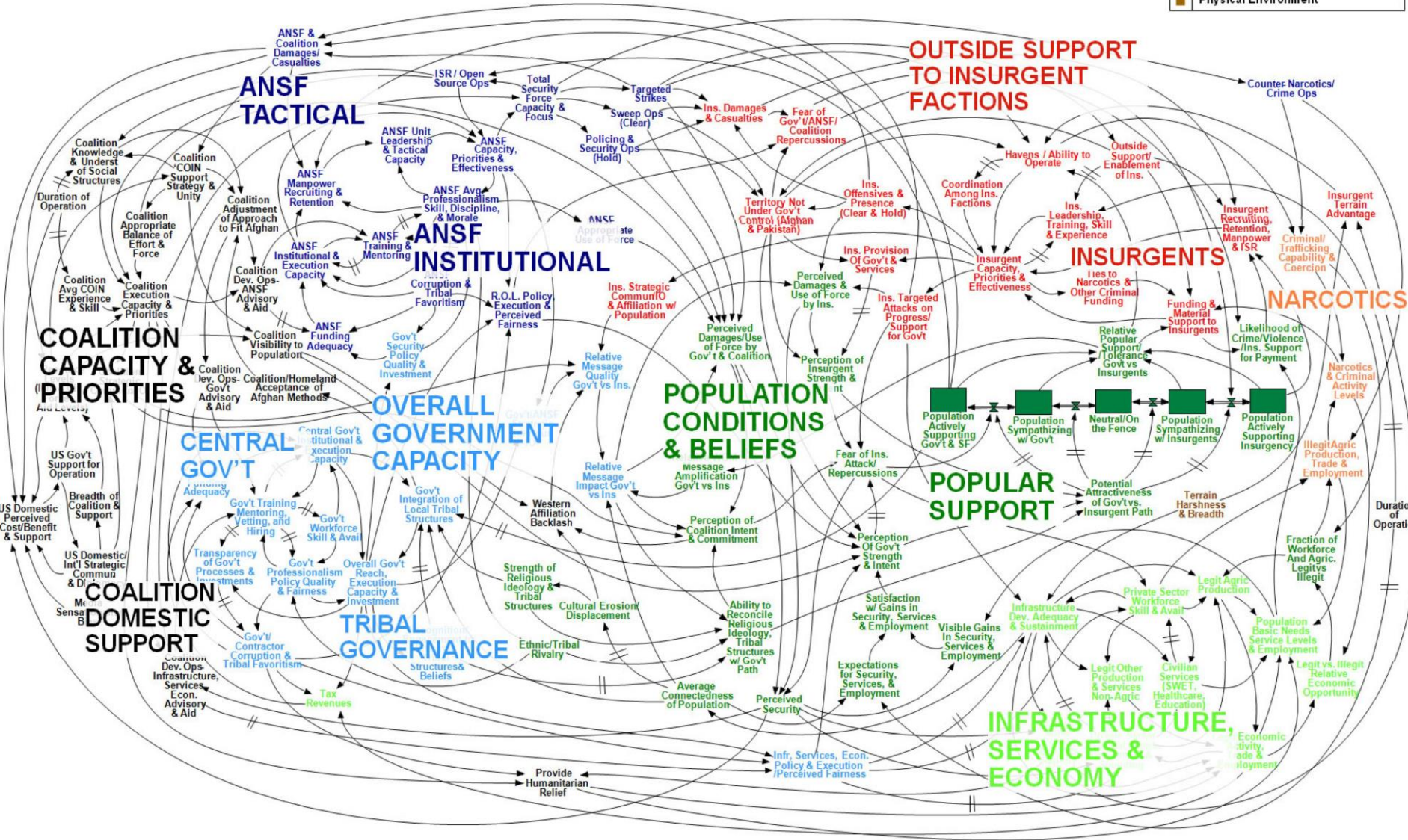
Use graphs with parsimony



Afghanistan Stability / COIN Dynamics



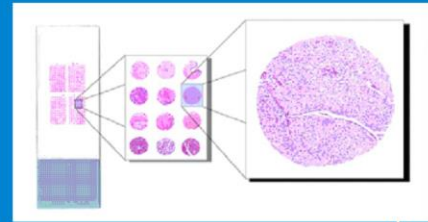
- Population/Popular Support
- Infrastructure, Economy, & Services
- Government
- Afghanistan Security Forces
- Insurgents
- Crime and Narcotics
- Coalition Forces & Actions
- Physical Environment



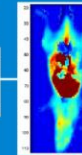
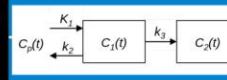
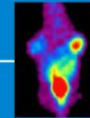
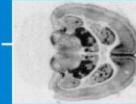
WORKING DRAFT - V3

Probe Development „today“

...chemists, biologists, physicists, physicians...



Tracer Development

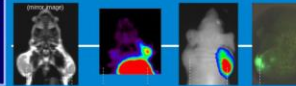


Localization, Quantification, Kinetics, Characterisation of the biochemical status

MI as an investigative tool for molecular biology

evaluation of function, regulation and interaction diagnosis and therapy models, knock out models

Transfer: Other Modalities Multimodality Imaging



radiotherapy, dosimetry, radiotoxic effects

Radiotherapy

Quantit. Monitoring

prediction, therapy planning and selection, monitoring

Drug

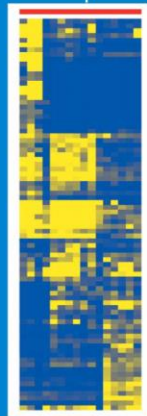
Therapy

Pre-therapeutic "In vivo Titration"

Therapy control

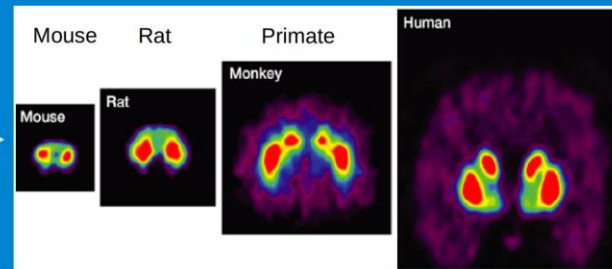
Selection of „key processes“

Proteomics Genomics



Data Mining

Drug Development



1. Labeled drug

1. Drug
2. Tracer

biodistribution, pharmacokinetics, excretion, metabolism, specificity, selectivity, optimal dosing

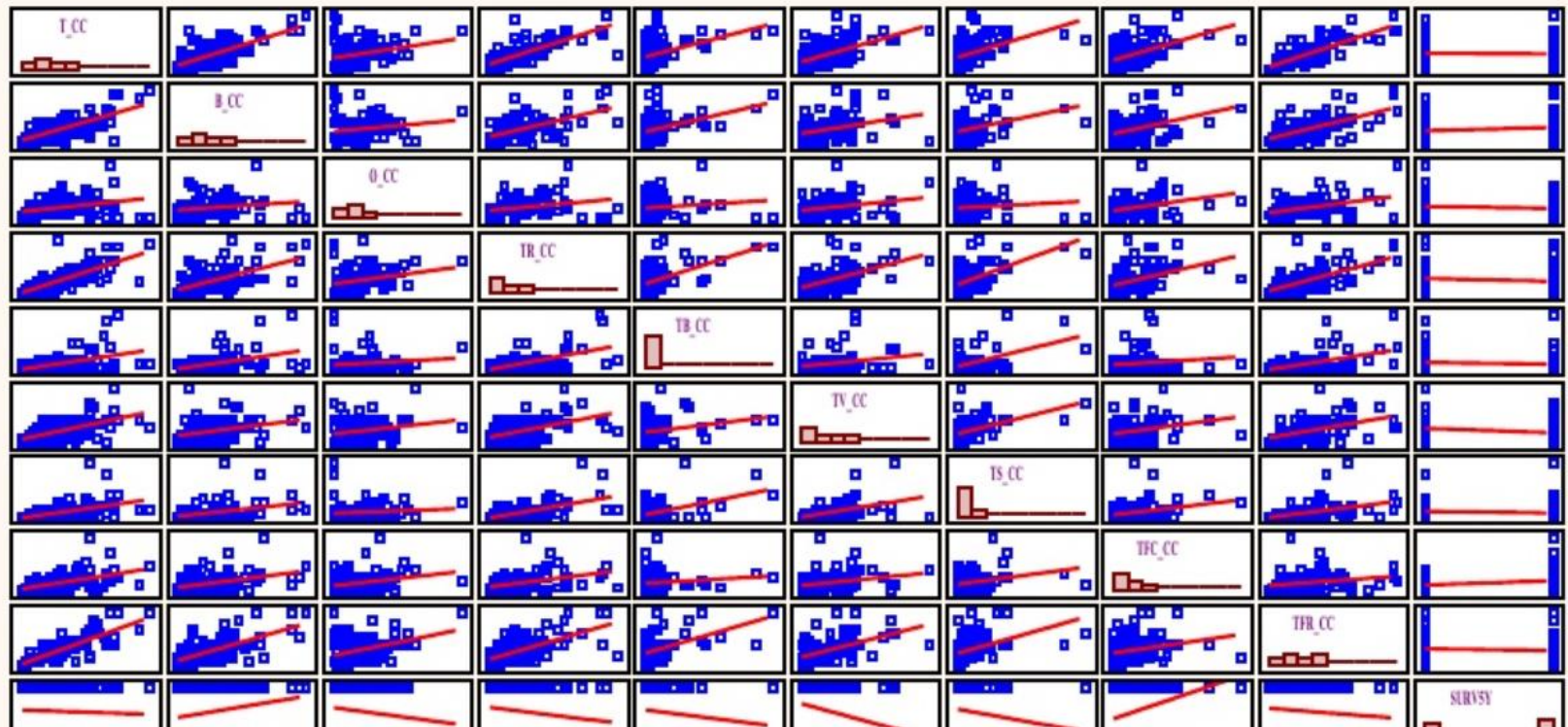
Logistic Regression Model of System: Immune Cell Ratio Factors-Survival Lung Cancer Patients:

Correlations (ILC1.STA 117v+108c)

Immune Cell Ratio Factors -5-Year Survival

Immunology of Lung Cancer Patients (n=108)

Logistic Regression



Results

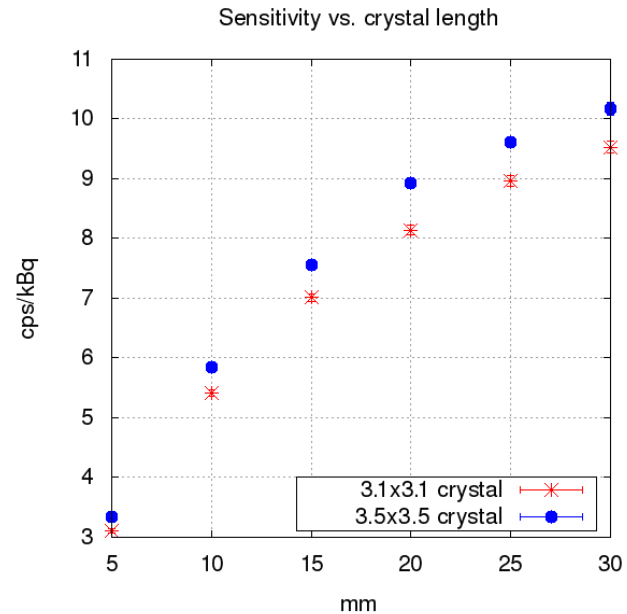
Simulation of system sensitivity vs. crystal length

Discrete MPPC

LYSO crystal 3.1cm x 3.1cm

LYSO crystal 3.5cm x 3.5cm

Sensitivity decreases with length



Graphs give a better summary of your topics

Graphs should be readable from far away

Name the axes!

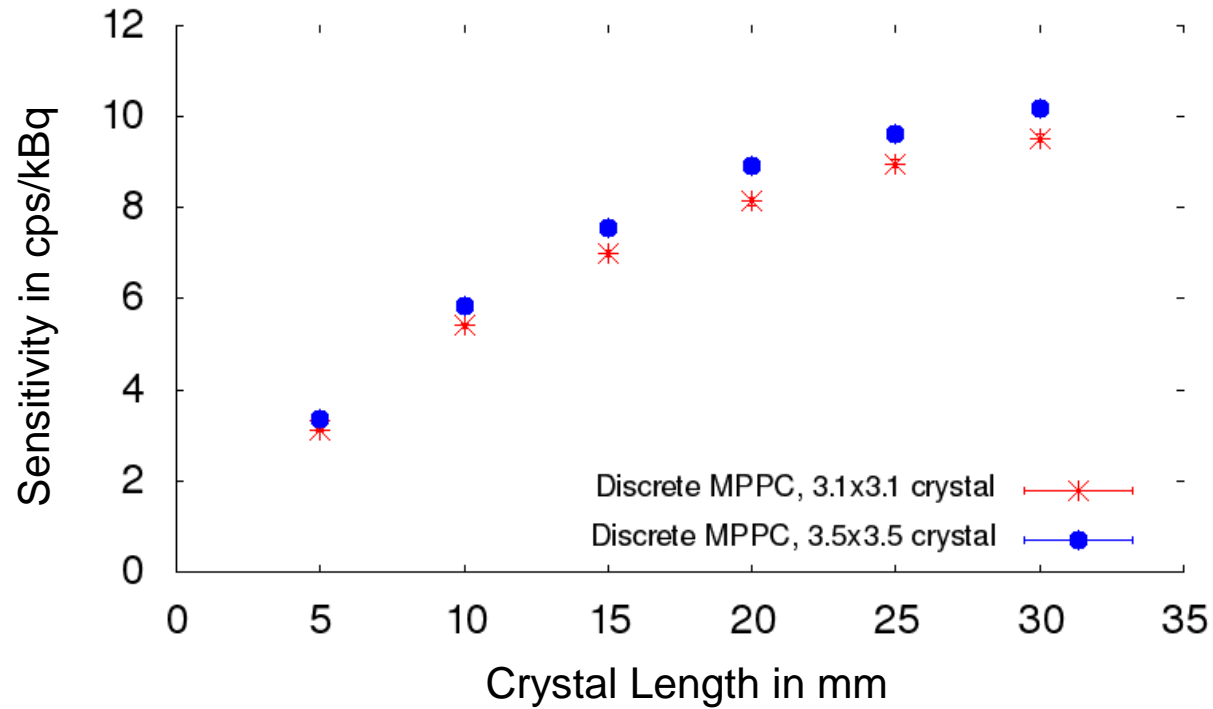
Put units on all values!

A single, well-explained graph contains a wealth of information

Most times clear graphs are better than tables!



Sensitivity decreases with crystal length





General content of a presentation



Introduction

Goal of the work

What do you want to do

Background – (medical) purpose

Which application do you target?

What are the problems encountered?

Why does this have an impact?

Other approaches to the topic

What other attempts have been made?

Why did they fail?

What could be improved?

Literature review

It is your duty to find other literature!



Introduction

Goal of the work

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Literature review

It is your duty to find other literature!

Do not forget to reference your literature!

Author, title, journal, volume, page, year.



Methods and Materials

Theoretical approach

Which mathematical framework is used?

How is this framework applied to the question?

What workflow is implemented?

You need to explain the general concept, not every step!

Experimental setup

How is the theory proven?

Which devices are used?

Is this sufficient to confirm the theory?



Results

Results

Focus on the main results

No need to show us each and every graph!

Which interpretation is given?

Show important pictures

You can also simplify graphs!



Discussion

What do you think of your work?

Is it complete?

Are there flaws?

What would you do differently?

Additional experiments?

Different experiments?

How does it compare to other work?

Do your literature research!



Conclusion

A single slide

Only the most important keywords

No new information!





Presentation Requirements



Make us feel you actually care

Good slides

- clear layout
- check spelling and grammar
- visually pleasant

Clear speech

- rehearse before presenting
- speak clearly
- make sure you know the pronunciation of all words you use
- look at the audience



Stay within the allotted time

Exceeding the time will be penalised

Requirements Presentation

5 minutes per presenter
we interrupt you at 5 min 30 s
2 minutes for questions

Intermediate and Final

7 minutes per presenter
we interrupt you at 7 min 30 s
3 minutes for questions
Final: optional 4 minutes for **live** demos





Requirements Presentation



Presentation Logistics

Date: Monday, 16.11.2020

Time: 09:00 sharp!

The order of presentations will be published on the course website

Consult with your supervisor, send him/her a draft (with sufficient time to react)!



Presentation Logistics

Respect the speaker and listen

We expect you to participate in the question session after each talk.

Upload the slides latest at the day of your presentation (see course website).

We do not provide adapters to connect to the beamer! Make sure you have the hardware running or ask your colleagues for help.



Few slides, keep it simple

Title slide

Background and Motivation

Problem Statement

Stakeholders

Requirements and Specifications

Tasks

Relevant UML diagram (e.g. Use Case)

GANTT Project Plan – work packages and milestones

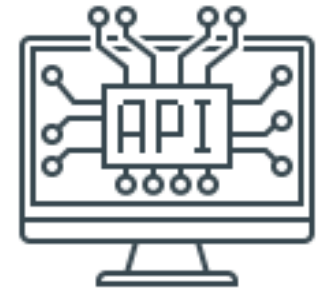
Keep in mind you have only 5 minutes!



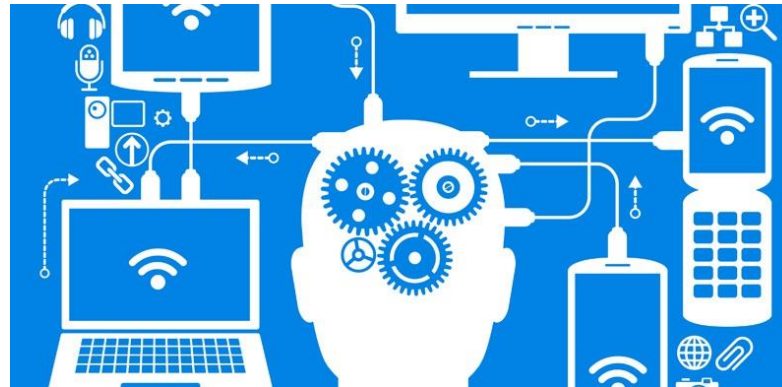
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Provide the full reference (author(s), title, journal, volume, page, year.) on the same respective slide

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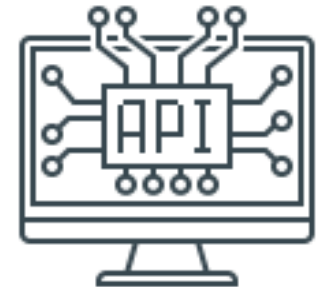
Source: <http://code-epicenter.com/wp-content/uploads/2016/01/programmer-vs-software-engineer-vs-developer.jpg>



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PMSD – Presentation Tips and Rules

That's it – thank you!

