title: Introduction PP2
Winter 2012

short title: hello

lecture: Protein Prediction II - Protein Function / Burkhard Rost, TUM, 2012 winter
Protein Prediction - Part 2: Function
Definitions

- **Computational Biology**
  - biology replacing experiments by computers (include neurobiology, image processing)

- **Bioinformatics**
  - anything that has to do with storing and using the information about bio-sequences

- http://www.rostlab.org/talks/
Who are we?
Some Professional Positions

- **Professor** for Computational Biology, TUM, Dept. Computer Science
- **Fellow** Institute of Advanced Studies, TUM
- **Affiliate professor** @ Columbia University in the City of New York, College for Physicians and Surgeons, Dept. Biochemistry and Molecular Biophysics
- **Member of New York Structural Biology Center**, City College New York
Study complex systems

  Master: Neuronal networks
  (Heidelberg, Bochum, Princeton, Harvard, UCSF)
- 1989-1995: PhD/Postdoc: Application of physics to
  Computational Biology, EMBL (European Molecular Biology
  Laboratory, Heidelberg)
- 1995-1996: European Bioinformatics Inst. (EBI), Cambridge, UK
- 1998: LION Biosciences
- 1998-now: Professor at Columbia University, New York
  (tenure since 2005)
- 2009: Alexander von Humboldt professorship
- 2009-now: Professor at TUM, Chair for Comp. Biology
- 2006-now: President of International Society for Comp. Biol.
Nothing makes me happier than to be proven wrong.
My passion is my job
Little $, but attention, friends, travel, fun
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  Dec 2009 - 2011
  (TV in 4: USA, Mali, Uruguay, Germany)
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- google.com “rost”
Rostlab & friends @ ISMB/ECCB Vienna

www.rostlab.org
Contact: Marlena Drabik: assistant@rostlab.org
Tim Karl

Contact: Tim Karl: karl@rostlab.org

Videos/Sysadmin

How sysadmin gets you started into studying Bioinformatics....
Exercises

- PhD students in group since 2011:
  - Tatyana Goldberg
  - Max Hecht

Contact: see www.rostlab.org

http://rostlab.org/cms/teaching/
Exercises

related to:
CAFA 2011: CAFA1, 2014: CAFA2)
Critical Assessment of protein Function Annotation
CAFA1 2011 ISMB/ECCB, Vienna
CAFA2 2014 ISMB Boston
Announcements

- Videos: SciVe / www.rostlab.org
- THANKS:
  Tim Karl + Julia Gerke
- Special lectures:
  - Dec 16: Tatyana Goldberg
  - Jan 25: Marco De Vivo (ISS Geneva)
  - Jan 27: Marco Punta (Pfam)
- NO lectures (not final):
  Dec 14(?), 21, 23
  Dec 28, 30 Jan 4, 6 (winter break)
- LAST lecture: Feb 5
- Examen: Feb 7, 11:00 (likely this room)
  - Makeup: may be: Apr 18 - morning

CONTACT: Marlena Drabik assistant@rostlab.org
Lecture plan (PP2 function)

01: 2012/10/16: no lecture
02: 2012/10/18: welcome: who we are
03: 2012/10/23: individualized medicine
04: 2012/10/25: Intro - function 1: concepts
05: 2012/10/30: Tatyana Goldberg: localization
06: 2012/11/01: no lecture: All Saints
07: 2012/11/06: Intro - function 2: homology
08: 2012/11/08: Intro - function 3: motifs
09: 2012/11/13: Localization 1
11: 2012/11/20: Localization 2
13: 2012/11/27: Localization 4
14: 2012/11/29: SNP effect 1
15: 2012/12/04: SNP effect 2
16: 2012/12/06: no lecture: Dies Academicus
17: 2012/12/11: SNP effect 3
18: 2012/12/13: Protein-protein interaction 1
19: 2012/12/18: Andrea Schafferhans: 3D function prediction
20: 2012/12/20: no lecture
21-24: no lectures - winter break (2012/12/23 - 2013/01/06)
25: 2013/01/08: Protein-protein interaction 2
26: 2013/01/10: Protein-protein interaction 3
27: 2013/01/15: Protein-DNA interaction 1
28: 2013/01/17: Protein-DNA/RNA interaction 2
29: 2013/01/22: Andrea Schafferhans: Docking
30: 2013/01/24: Marco De Vivo (ISS Geneva)
31: 2013/01/29: Marco Punta (Pfam)
32: 2013/01/31: networks
33: 2013/02/05: wrap-up
34: 2013/02/07: examen
Weeks 1-2 (Oct 18, 23, 25)
Lecture 1: Welcome to the hot year
Lecture 2: From molecular change 2
  individualized medicine & studying population genetics
  - Exercises: real life experiment
Lecture 3: Intro into protein function
  Homology-based inference