

Running a PhD School

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IT University of Copenhagen

My view on PhD education

- Goals
 - Further frontiers knowledge
 - Ready students to become leaders
 - Build a network

- I am heading the PhD School at the ITU



Universität Karlsruhe (TH)
Research University · founded 1825

Carnegie Mellon



IT University
of Copenhagen

Overview

- Challenges in the Global Context
- How do we run the PhD School at the IT University of Copenhagen?
- Self evaluation



National vs. International

Denmark: Seven public universities

- Stimulate the local economy
- PhD is expensive
 - 200 000 Euro
 - 3 years
- Expectations
 - Generate value
 - Be global
 - Be great
 - Be fast



National vs. International



One big network

Tough competition

Countries with excellent
undergraduate
education

Countries with
universities that have
grown excellent
reputations

Europe's Situation

Blue sky

vs.

Strategic research

Time to market

vs.

Market to time

Outsourcing

vs.

Insourcing

Inferiority

vs.

Superiority

Humble Suggestion

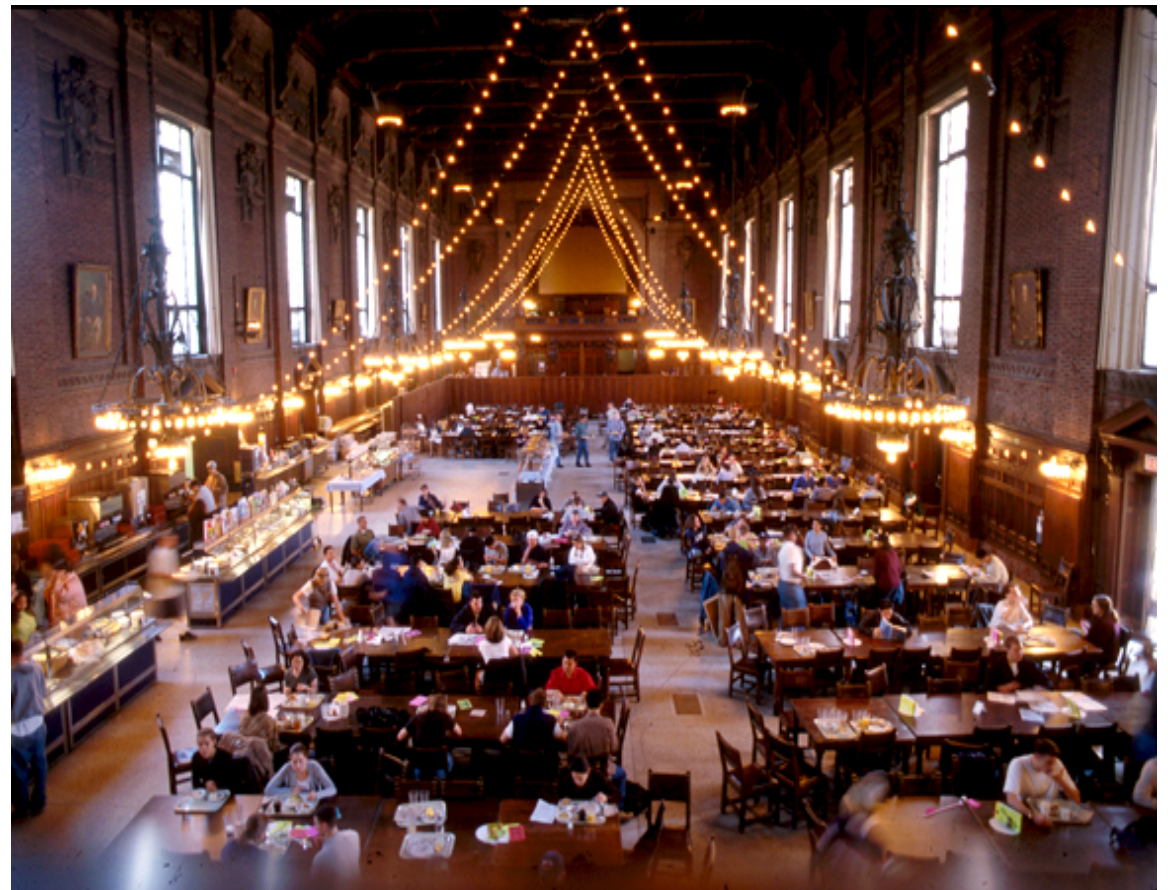
1. Recognize what is good.
 - Excellent high schools
 - Excellent undergraduate programs.
2. Concentrate and build on our strengths.
 - Fix what is broken
 - Support quality
3. Avoid pitfalls (complacency)

Being Elitist vs. Being Common

Principle

Great students in
Great students out

Elite Universities



Lost in Translation

- What is a Bachelor degree?
 - Liberal Arts Degree
 - Deep Scientific Knowledge
- What is a Master degree?
 - US: Professional degree or consulatory degree
 - German Diplom
 - Danish Candidate?
- What is a PhD degree?

東京

Hochschule: UNIVERSITÄT KARLSRUHE

Stud./cand. _____ (Studentenfach) (Vor- und Zuname)

Sommer-Winter-Halbjahr 19 90/91

5 tes Fachsemester

Vor. Nr. & Vorz. Verz.	Namen der Dozenten	Genauere Bezeichnung der Vorlesungen, Übungen oder Praktika (für jedes Semester nur eine Seite beschreiben)	Wochenstundenzahl
24070	MENZEL	FORMALE SYSTEME	3
24071	MENZEL...	Üb. FORMALE SYSTEME	1
24072	CALMET	ALGORITHMEN-TECHNIK	3
24073	CALMET...	Üb. ALGORITHMEN-TECHNIK	1
24074	JÄHNICHEN	SOFTWARE-TECHNIK	3
24075	JÄHNICHEN...	Üb. SOFTWARE-TECHNIK	1
24076	WETTSTEIN	SYSTEM-ARCHITEKTUR	3
24077	WETTSTEIN...	Üb. SYSTEM-ARCHITEKTUR	1
24104	LOCKEMANN	DATENBANK-EINSATZ	2
24376	DILLMANN	SEMINAR: MASCHINELLES LERNEN	2
01035	HEUSER	FUNKTIONALANALYSIS	4
01036	HEUSER	Üb. FUNKTIONALANALYSIS	2

Universität Karlsruhe (T.H.)
Studentensekretariat
Kaiserstraße 12 · Postfach 6980
7500 Karlsruhe 1

Zum Nachweis einer ordnungsgemäßen Immatrikulation (Rückmeldung) für das laufende Semester hier Quittung (Bank-, Postscheckbeleg) über eingezahlte Sozialbeiträge einkleben!

Bestätigung/Quittung
(Auftragsannahme der Bank)

Stempel der Bank/Sparkasse
Überweisung wurde zur
Ausführung angenommen am

05. Juli 1990

Sparkasse Karlsruhe

über
DM 34,00

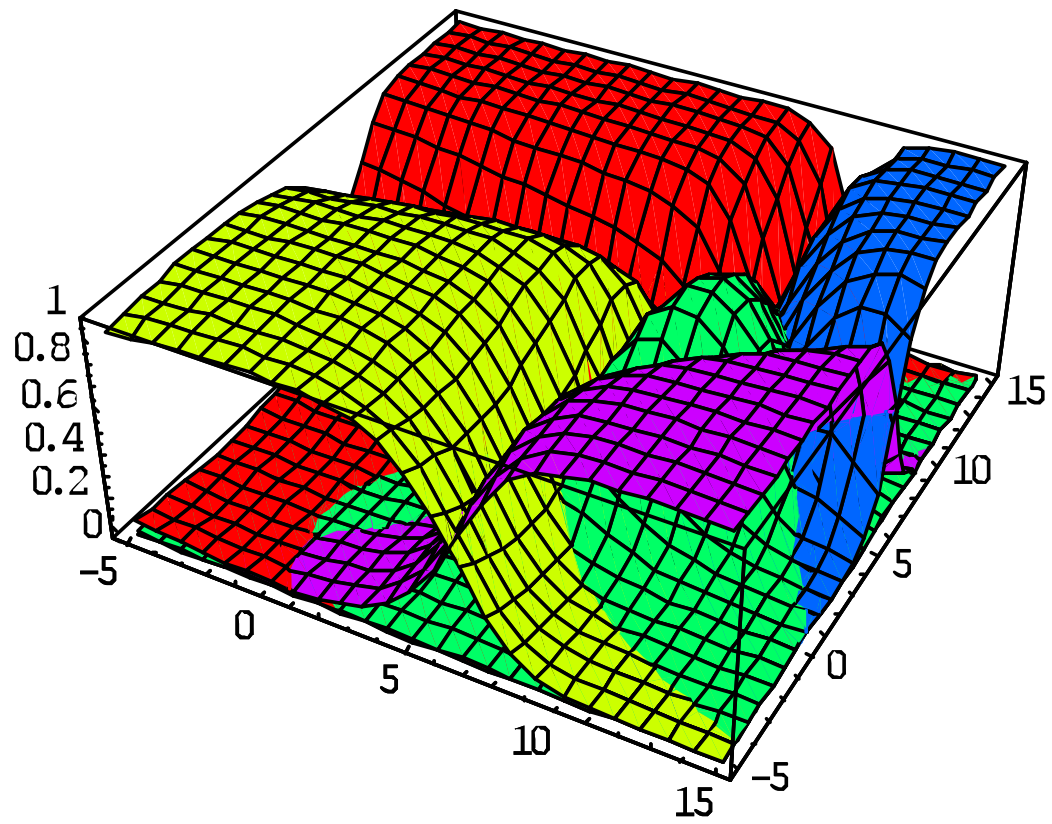
Studentenwerksbeitrag

für Matrikelnummer
0616086

Semester
WS 90/91

My Studienbuch 1990

Summary



The
PhD SCHOOL
at the
IT University of Copenhagen

5+3
4+4
5+5
2+2



Thesis Proposal

DEFENCE

FOK



What do we expect?

To educate a generation of leaders in

- academia
- business
- society

Our students must

- Produce a piece of work that others build upon
- learn how to teach
- build a network

OUR GUIDING PRINCIPLE

Support the student



Trust the advisor

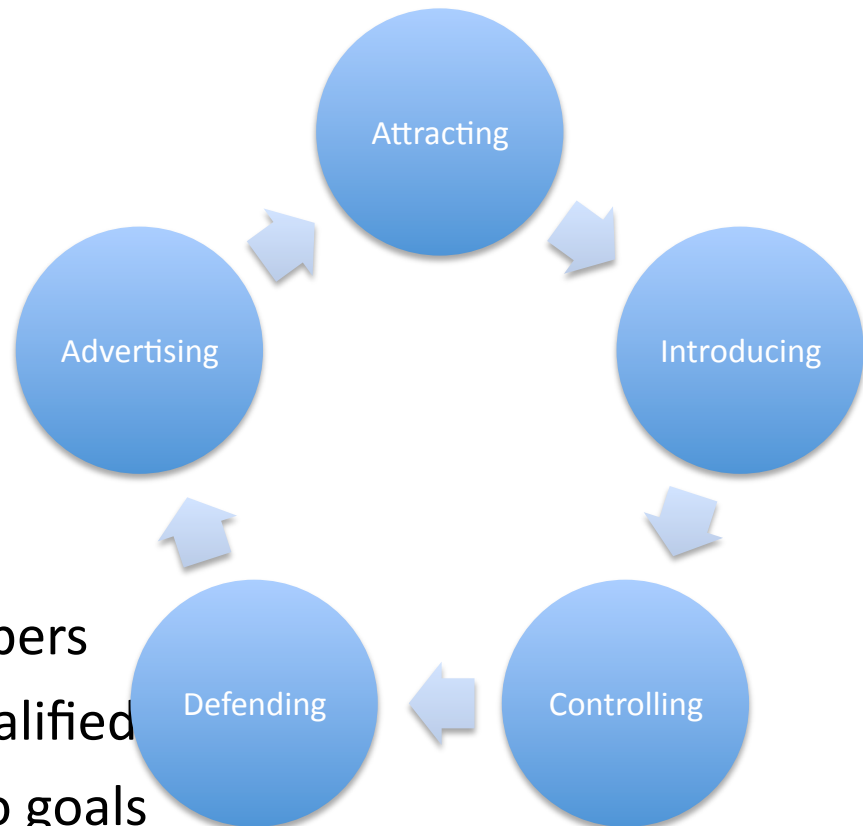
(but within reason)

Playing the Reputation Game

We are young
But we play to win!
Spiral of life or death
Long term investment

Measures of success

- Derivative of applications numbers
- Derivative of how many are qualified
- Evaluate output with respect to goals
- Measure the yield



How do we find candidates?

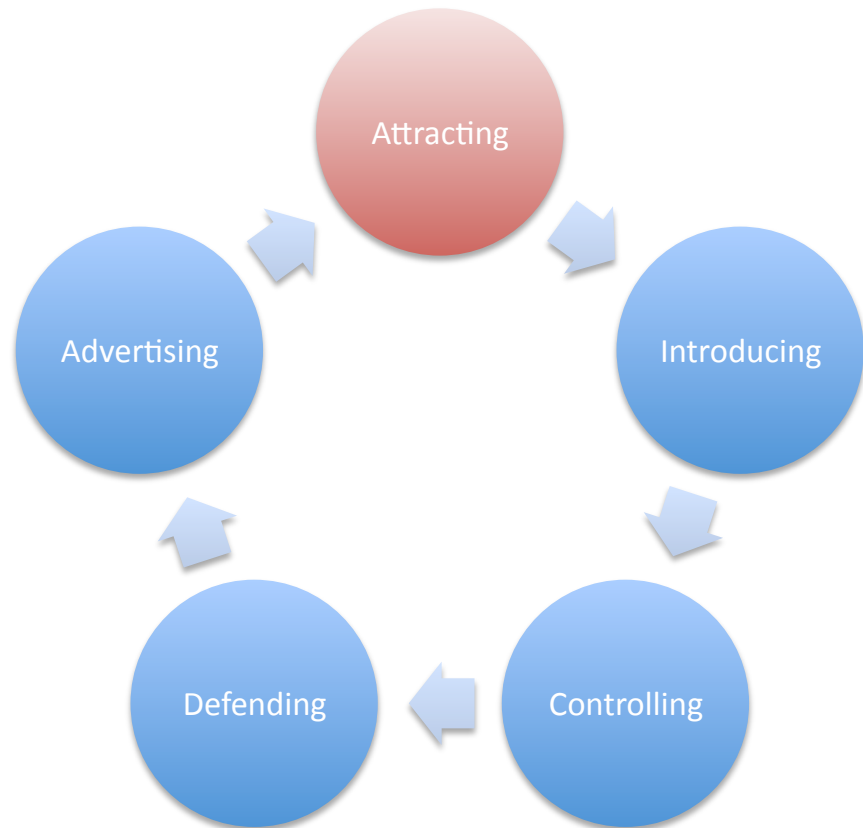
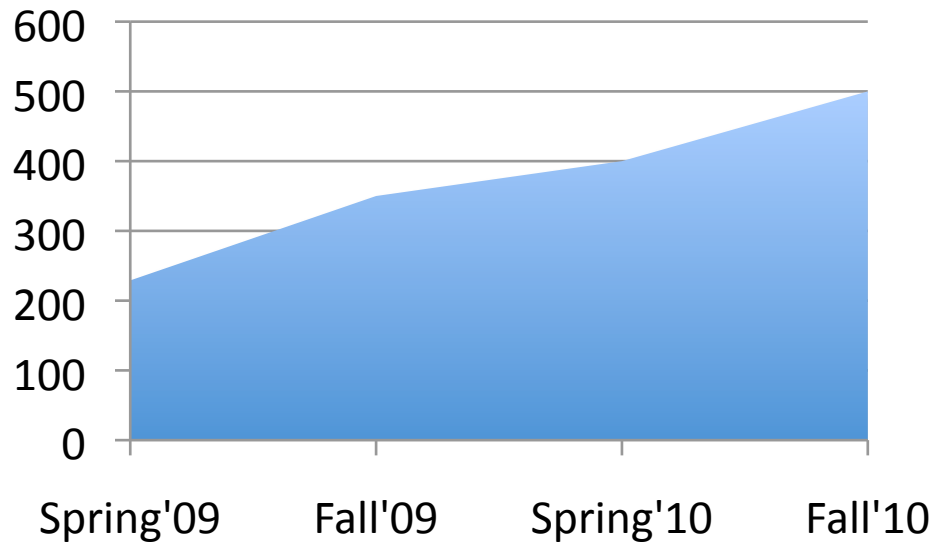
Domain: Entire World

Regular application deadlines

- mid April mid October

Rattle the research networks

- Email lists
- Personal connections
- Establish channels




How do we evaluate them?

Evaluator System

- Collaborative tool
- Easy and fast to use
- Three-click evaluation
- Two years experience
- *It's not software it's a process*

Not for sale but free to use

- We are happy to share it
- Send mail to
carsten@itu.dk



The screenshot shows a web browser window titled "Evaluator: new". The browser's address bar shows "Design Council Games containerschiffe - G...". The page content includes a header with "Evaluation Tool" and the IT-Universitet logo. The main heading is "Support: New applicant". Below this is a form with the following fields:

Number	2010-10-10-001
Deadline	18.1.2010
Name	Carsten Schuermann
Responsible	4
Url	:cure.itu.dk/phdadm/2010-Fall/001.pdf
Kind	-

Below the form are "Create" and "Back" buttons. The browser's status bar at the bottom shows "Done" and "FoxyProxy: Disabled".

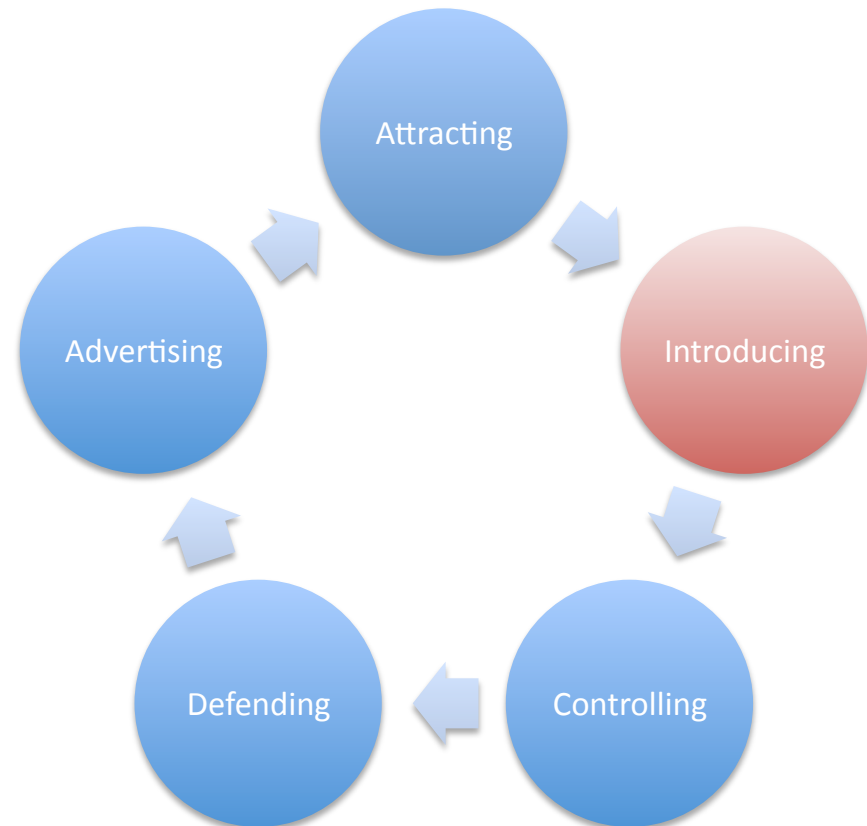
How do we make them feel welcome?

ITU Introduction course

- One day event
- Department introduces itself
- Vice Chancellor gives a talk
- PhD student gives advice
- Talk about the difficulties and expectations of doing a dissertation

Effects

- Students identify with the university
- Students meet each other



How do we control quality?

Validate the advisor and student relation

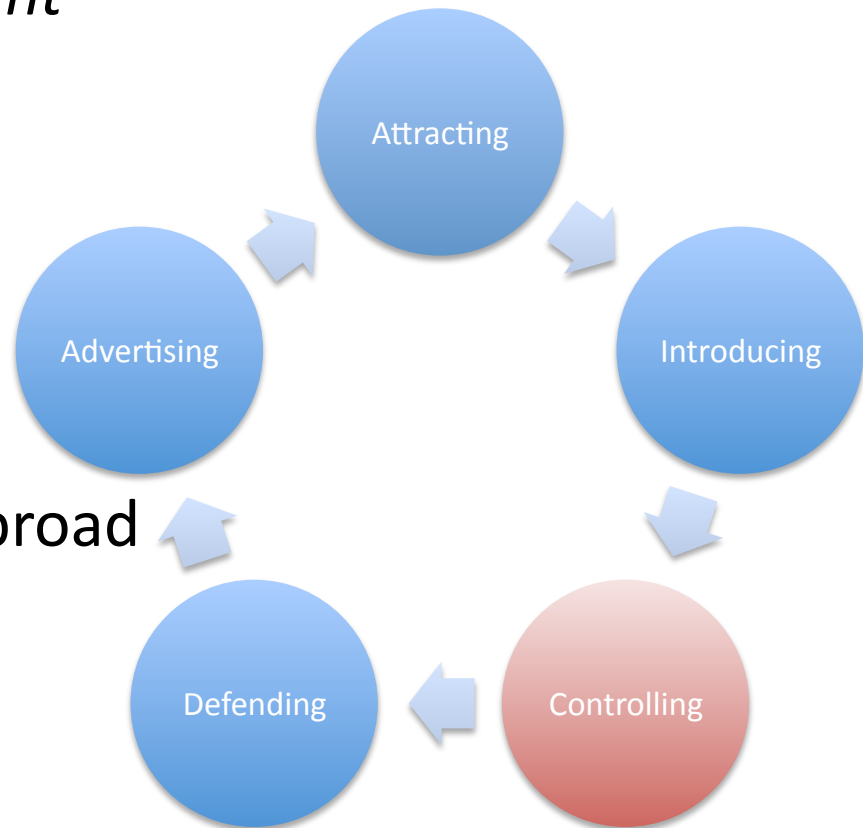
- Study plan (after 3 months)
- Half year reports
- Thesis proposal

Careful planning of the stay abroad

Student lunches

Personal conversations

Time management



Thesis Proposal

History

- Suggested by an advisory board in 2007
- Discussed among *all faculty* in 2007
- Introduced January 2008
- First student defending June 2009

Highlights

- Low overhead (5 page document)
- Student: 15min talk: Details
- Advisor: 15min talk: Big picture, nugget
- Dissertation evaluation committee is set

Outcome

- PASS/TRY AGAIN



EDUCATIONAL REQUIREMENTS

PhD courses

- Faculty currently use “research time”
- No integration into ITU teaching model

Example: Programming Logics and Semantics

- Critical mass of students
- Linear Logic PhD course 12-14
- Teaching is part of research

Our Speciality

- Mini PhD courses lecturer from outside
- Follow student’s demand
- Summer/Fall Schools



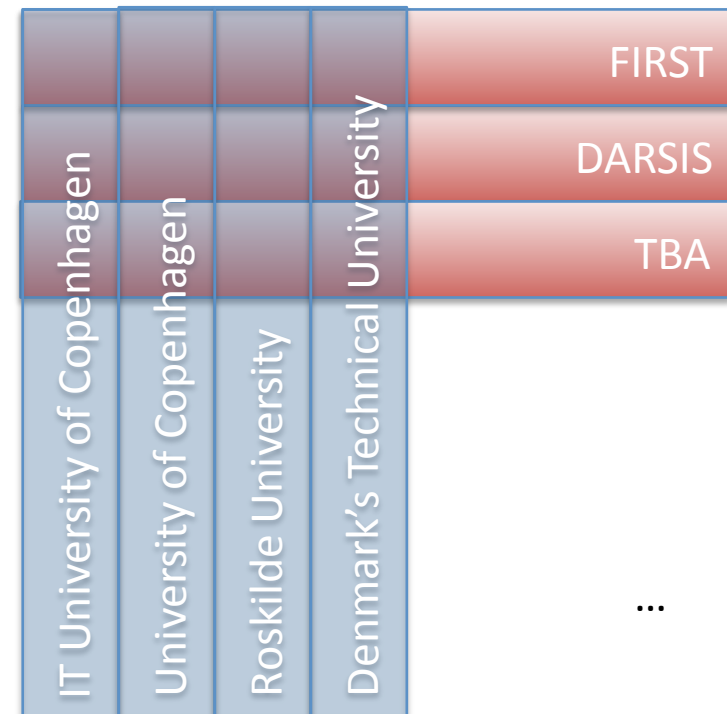
PHD Research Schools

PhD school

- Responsible for quality of the work
- Vertical support
 - Integration into one university
 - Teaching
 - Interaction with people in different fields

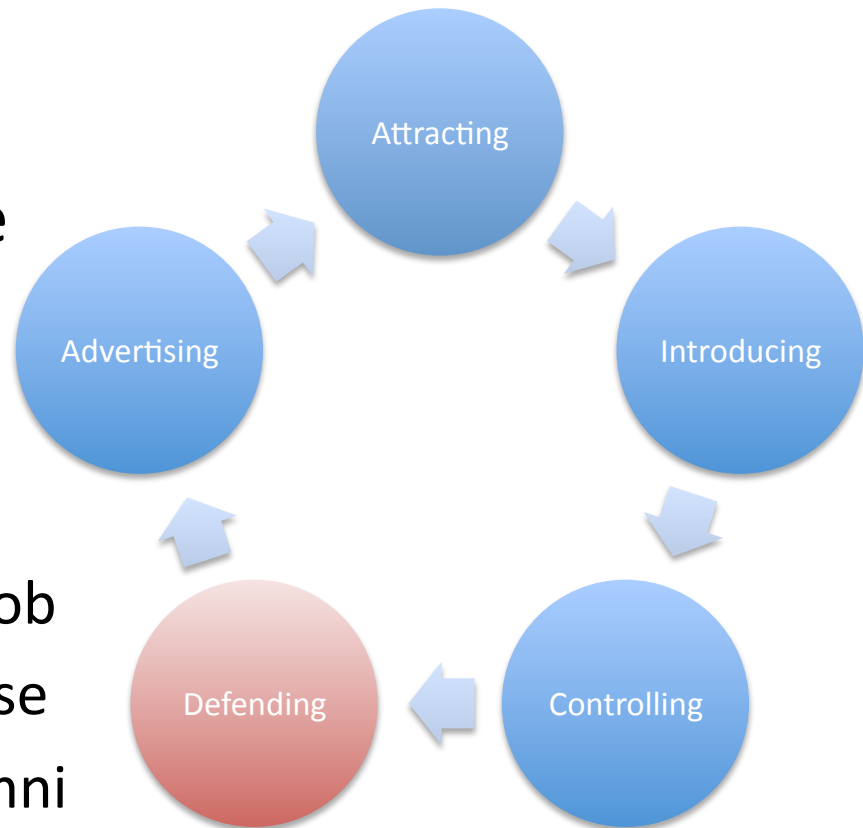
PhD research school

- Responsible for research network
- Horizontal support
 - Across several university
 - Connection/peers
 - Focuses on research
 - Limited to Danish Universities (?)



How do we support the defense?

- Governed by law
- Evaluation committee
- Show the student that we acknowledge their hard work.
- However, we should
 - more to help them find a job
 - offer an “emigration” course
 - stay in touch with our alumni



How do we ADVERTISE?

With our graduates!

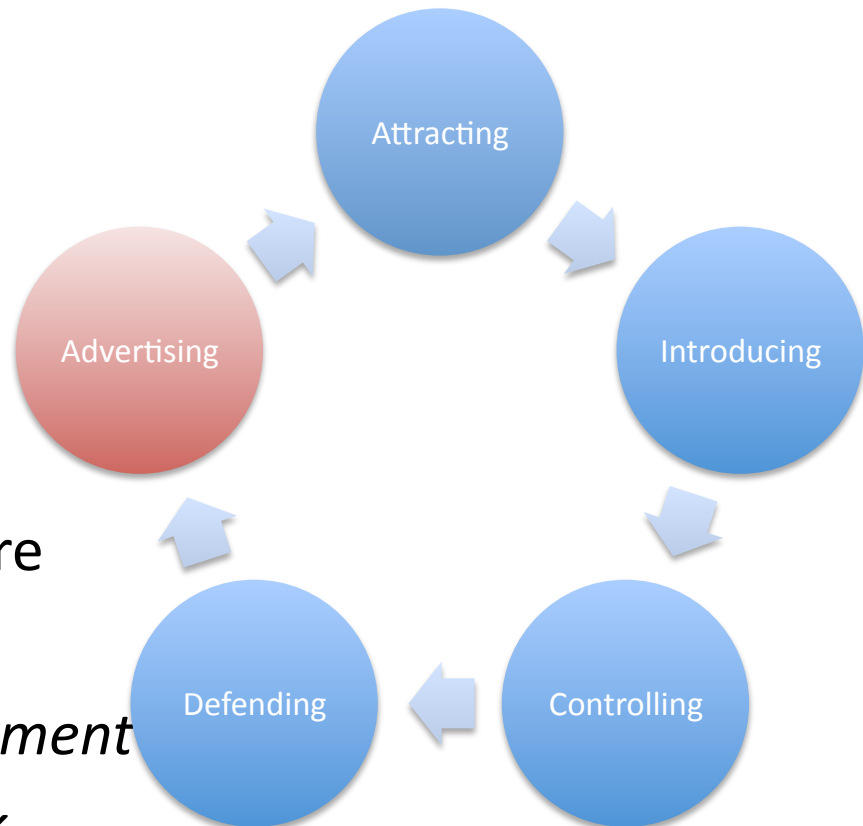
(Raw talent * Education)

Trying to establish channels to

- find good universities
- draw students from there
- draw more students from there

Sometimes we get free advertisement

- News spreads fast in Denmark



[It-job](#)
[Ingeniør-job](#)

BEC

Vi har brug for en
forretningsudvikler mere
til pension


Danske Bank
Graduates til
forretningsudvikling

Delta Elektronik
Applikationsingeniør

Dansk
Beredskabskommunikation
Support Engineer -
Control Room - SINE

[Flere it-job »](#)
[Nyhedsbrev](#)

Få it-nyheder og blogs hver
dag
og [vind en Nintendo Wii.](#)

 [RSS Nyhedsfeed](#)
[Afstemning](#)

Kan du bruge Facebook
på din arbejdsplads?

Nej, der er en smert for

216 kæmper om at blive ITU-æggehoved

Der er masser af interesse for forskeruddannelser inden for it. På IT-Universitet er der 216 ansøgere til 11 ph.d.-pladser.

AF TANIA ANDERSEN, MANDAG 27. APR 2009 KL. 13:29
EMNER: [UDDANNELSE](#)




IT-Universitetet i København (ITU) har fået i 216 ansøgere til bare 11 pladser på universitetets ph.d.-uddannelser.

»Vi oplever, at IT-Universitetet er et eftertragtet sted at starte sin forskerkarriere. Jeg tror, at en væsentlig årsag til dette er IT-Universitetets fornemmelse for udviklingen inden for samfund og it og desuden universitetets generelle fokus på globaliseringen,« siger lektor Carsten Schürmann ifølge en pressemeddelelse. Han står i spidsen for rekrutteringen af ITU's ph.d.-studerende.

Videnskabsminister Helge Sander har bedt universiteterne om at fordoble deres optag på ph.d.-uddannelserne. For ITU betyder det en stigning fra 11 sidste år til 22, og de 11 kommende studerende i den nuværende runde bliver således fulgt til dørs af 11 andre studerende fra første runde.

En stor del af finansieringen af de 22 ph.d.-studerende kommer fra samarbejdsprojekter med eksterne partnere, såsom private virksomheder.

»IT-Universitetet går nu i gang med at finde flere firmaer, som kunne være interesseret i at medfinansiere ph.d.-studerende, som kan være med til at dække deres behov for højt kvalificerede medarbejdere,« fortæller prorektor Jørgen Staunstrup ifølge en pressemeddelelse. Skulle nogen være interesseret, sidder han klar ved telefonen, lyder det fra ITU.

 [Send til netværk](#)  [Send til en ven](#)  [Udskriv](#)

[Seneste nyt](#)
[Seneste debat](#)
[Mest læste](#)

- 14:16 [Windows 7 RC kan downloades af udviklere i dag](#)  2
- 13:40 [ITU-studerende er Danmarks duksedrenge til at gennemføre](#)  1
- 11:07 [Norske myndigheder og virksomheder står pivåbne for it-misbrug](#)
- 11:05 [Lever din sky op til det lovede?](#)  1
- 09:57 [Videomøder i hastig vækst](#)
- 09:32 [Kun 13 procent af firmaer sparer strøm på pc'er](#)
- 09:11 [It-kriminelle: Tjen 3 øre for hver CAPTCHA](#)  2
- 06:59 [Kunder tvinger SAP til at bevise bedre support](#)
- 29/04 [EU-enighed om telekompakke: Internet er ikke en menneskeret](#)  1
- 29/04 [Nu kommer Twitter-software til erhvervslivet](#)

[Seneste blog-indlæg](#)


Vedr. Microsoft Autorun
AF POUL-HENNING KAMP



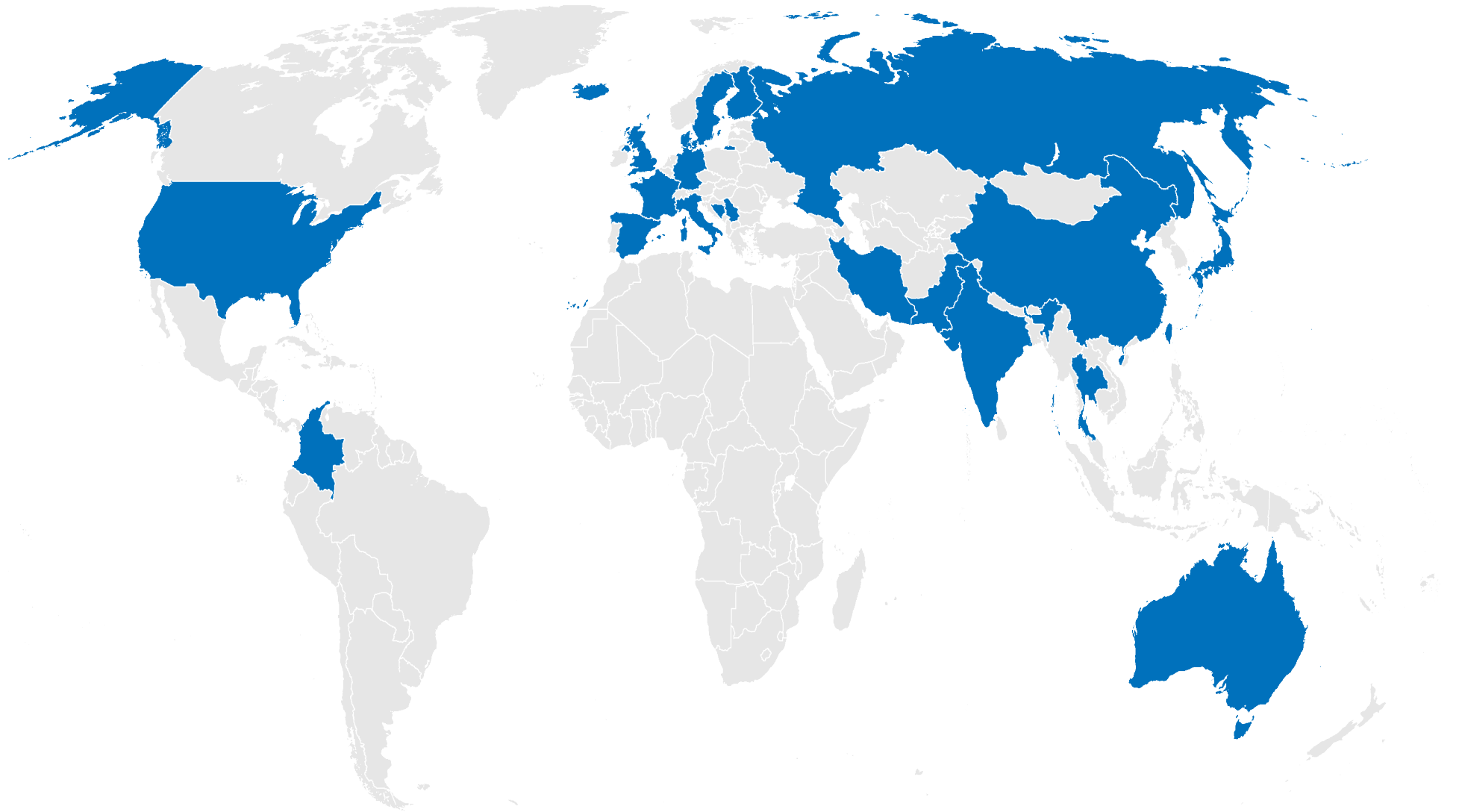
Multimedieskat - betal for at arbejde over
AF PETER TOFT



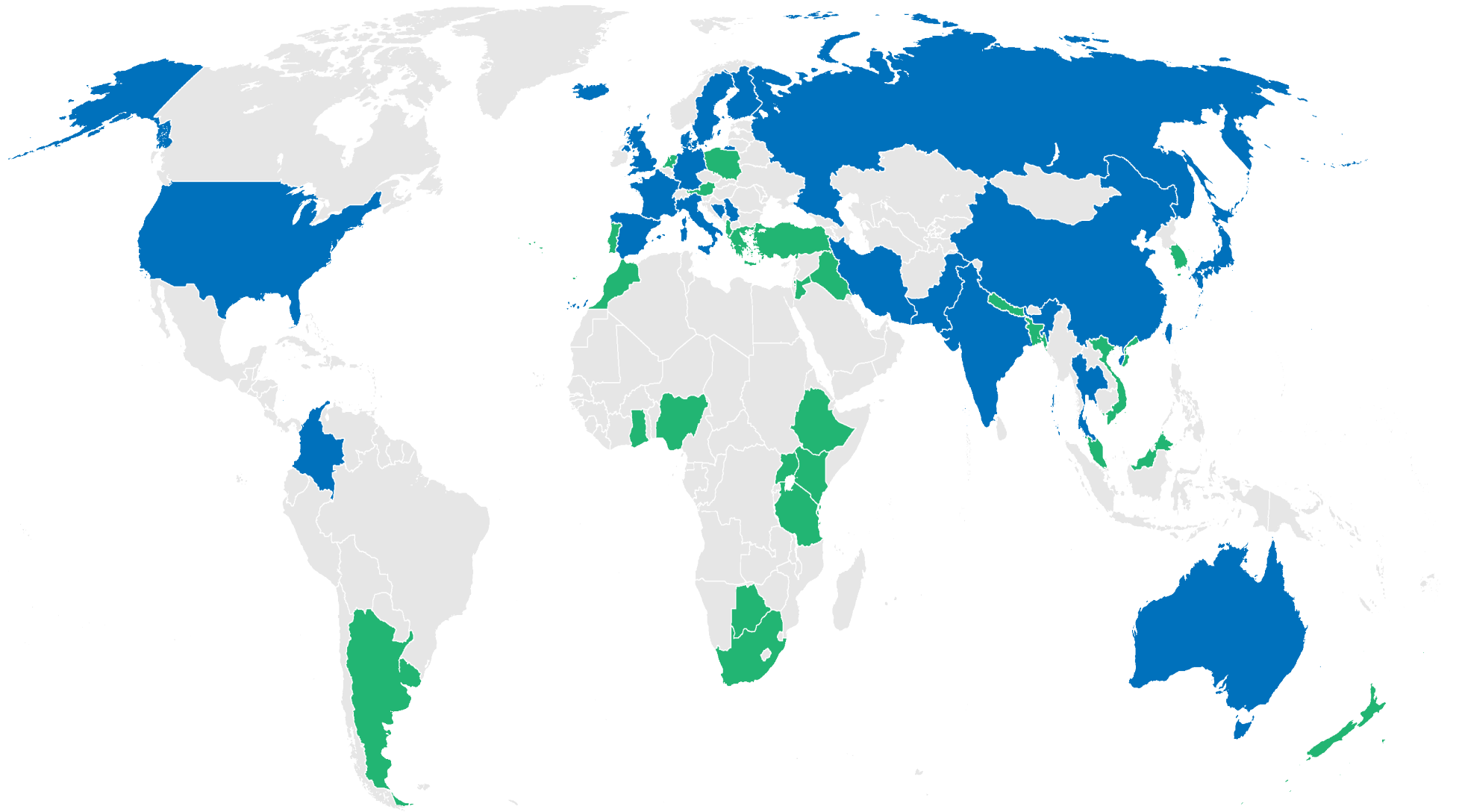
Google inspirerer for muligheden med "en stor database af offentlig fællesviden"
AF HENRIK HVID JENSEN

STATISTICS

The PhD school of the IT University of Copenhagen	2006	2007	2008	Spring 2009	Fall 2009 <i>Estimated</i>
Total number of PhD students admitted	6	12	16	12	
Total number of PhD students enrolled	38	37	39	45	
Total number of PhD degrees awarded	12	8	9	4	18
First Research School at the IT University of Copenhagen	2006	2007	2008	Spring 2009	Fall 2009 <i>Estimated</i>
Number of regular PhD students admitted into FIRST ¹	5	9	6		
Number of co-financed PhD students admitted into FIRST ²	1	1	4		
Total number of PhD Students admitted into FIRST	6	10	10		(1)
Industrial PhD students at the IT University of Copenhagen	2006	2007	2008	Spring 2009	Fall 2009 <i>Estimated</i>
Number of PhD students admitted	0	0	1	0	
Number of PhD students enrolled	2	2	3	(1)	
Number of of PhD degrees awarded	0	0	2		(1)

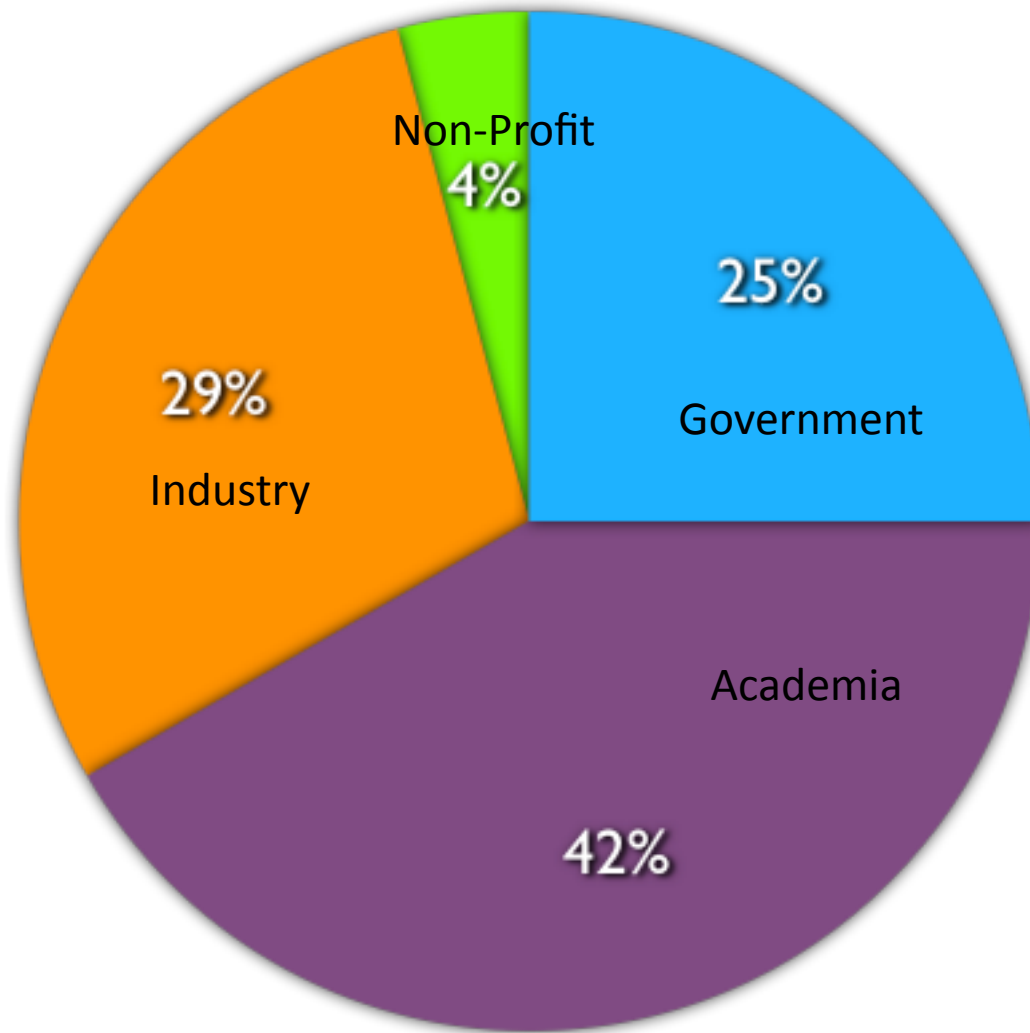


IT UNIVERSITY OF COPENHAGEN



IT UNIVERSITY OF COPENHAGEN

Where do our graduates go?



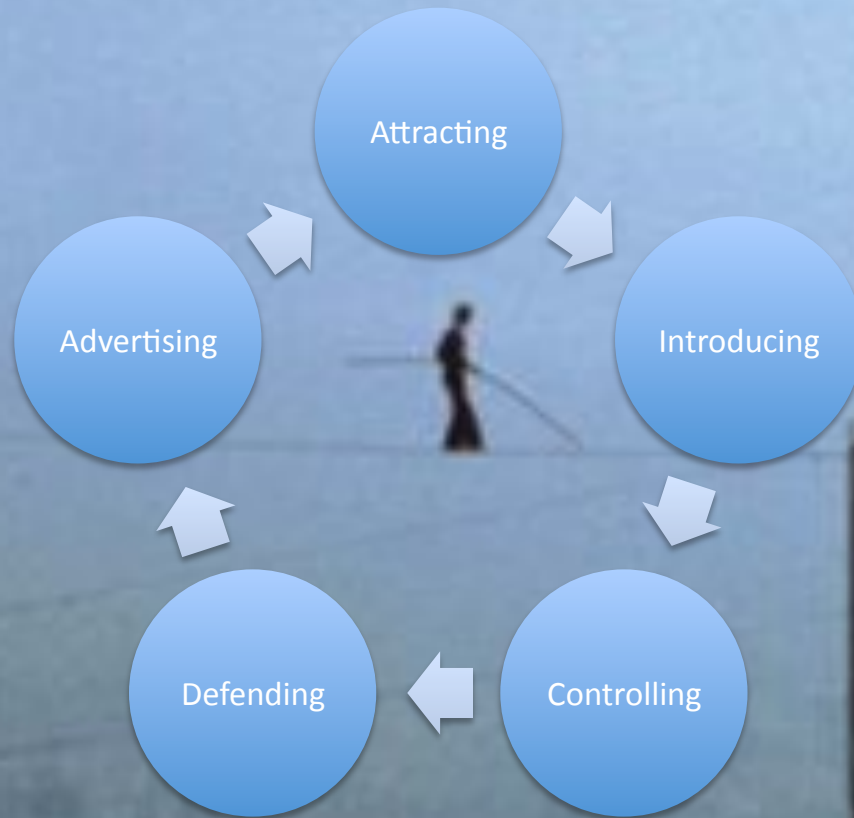
- Currently about 60% of our PhD students come from abroad.

Self Evaluation

- The PhD School could be more closely integrated into the university
- Active participation in hiring process
- Integration of teaching PhD courses into regular teaching load of faculty
- Faculty discussions about students' progress, e.g. black friday
- More PhD research schools at ITU
- PhD student teaching ideally more relevant to research
- Emigration course
- Strengthen alumni relations
- Evaluation software works great!



{Pre: An outstanding faculty}



{Post: High-Risk High-Return Research}