An academic path: me, my job and my research

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Thursday, November 12, 2009
“Academic” path

1980  Childhood in Montreal
1992  High school
1997  Undergrad at McGill
2001  Japan
2002  Ph.D + postdoc at Harvard
2008  World
2009  Assistant professor at UIC

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KEY Factors:

Professor Avis
Professor Toussaint
Professor Chvatal
Professor Gyorfy
......

KEY LESSONS LEARNED:

Importance of role models

Math is fun!
KEY Factors:
- Peers
- Parents

KEY LESSONS LEARNED:
- Importance of some competition
- Math is (still) fun!
- Nerdy is OK / great
KEY Factors:

KEY LESSONS LEARNED:

Women approach things differently
Engineering is (also) fun!
Stand out in a good way

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KEY Factors:

Take (some) time off is good for you (+ science)

KEY LESSONS LEARNED:

Don’t judge a woman by her...?

Taking (some) time off is good for you (+ science)
KEY Factors:

- Learn your strengths
- Importance of female peers
- Sticking out is definitely a plus
KEY Factors:

WISE
Support For Success
UIC Women in Science & Engineering Program
LEADING THE WISE WAY TO BETTER SCIENCE AND ENGINEERING

KEY LESSONS LEARNED:

Play to your strengths
Importance of female peers
Great time to be a woman in science!!
What do I do?

"Assistant Professor" at UIC

http://www.uic.edu/index.html/colleges.shtml

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What do I do?

``Assistant Professor” at UIC

40% Teach: 1-2 courses per semester  \textit{(Lecturer vs. professors)}

40% Research: with colleagues, undergraduate, Master’s, Ph.D. students

write grants (get $$ for my research - like a scholarship)

20% Service: conferences, reviewers, committees
What is teaching?

You all know
What is research?

**It's an entire process**

**DICTIONARY DEFINITION**

**RE-SEARCH**
- **Function:** noun, verb transitive
- **Etymology:** Middle French recerche, from recerchier to investigate thoroughly, from Old French, from re- + cerchier to search
- **Date:** 1577
  1. to search or investigate exhaustively
  2. studious inquiry or examination; especially : investigation or experimentation aimed at the discovery and interpretation of facts, revision of accepted theories or laws in the light of new facts, or practical application of such new or revised theories or laws
  3. the collecting of information about a particular subject
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Learn! Discover!

Go where no-one has gone before! Innovate!

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What do I research?

- Engineering =
- Electrical engineering =
- Wireless communications =
- Information theory =
But why?
\[ f = \frac{c}{\lambda} \]
f = c/λ

Electromagnetic Spectrum

Frequency (Hz)

10^18
10^17
10^16
10^15

X-rays
Gamma-rays
Ultraviolet
Visible
Near IR
Infra-red
Thermal IR
Far IR

Wavelength

0.1 Å
1 Å
0.1 nm
1 nm
10 nm
100 nm
1 μm
10 μm
100 μm
1 mm
1 cm
10 cm
1 m
10 m
100 m
1 km
1000 m

1000 MHz
500 MHz
100 MHz
50 MHz

UHF
VHF
FM
AM

Radio, TV
Microwaves
Radar

Louis E. Keener - Coastal Carolina University
f = c/λ

Electromagnetic Spectrum

Used for "radio" communication!
Unused spectrum?
Goal

``Assistant Professor" at UIC

Find more efficient ways of communicating wirelessly!

Especially in wireless networks....
Questions, now or later, are most welcome

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