بسم الله الرحمن الرحيم

جامعة قطر
QATAR UNIVERSITY

Research Issues You MUST Know!

Skills, Responsibilities & Ethics

Tamer Elsayed

Oct 15th, 2014

Disclaimer

- This is **NOT** a lecture!

- ***Open***, ***informal***, ***interactive*** and ***light*** discussion about research issues you really NEED to know
- In some issues, I will give my opinion
  - But it might not be the only one!

- All questions, remarks, contradictions are welcome ☺

Roadmap

- Research skills
- Research responsibilities
- Research ethics
- Open discussion

RESEARCH SKILLS (IMHO)

Research **skills**
are
life **skills**

Needed Before Being a Researcher

- Hard-working
- Dedication
- Motivation
- Commitment
- Patience
- Honesty
- …

Acquired During Research (Technical)

- Problem solving
- Research methodologies
- Oral communication skills
- Reading skills
- Writing skills
- Critical thinking
- Competence
- Research Ethics
- …

Acquired During Research (Life)

- Perseverance
- Initiative
- Time management skills
- Networking skills
- Independence
- Team/collaborative work
- Community service
- …

RESEARCH RESPONSIBILITIES

Responsibilities

- Contributing to the advancement of our countries/nation
  - Contributing to the wider body of knowledge
- Developing capacity for “independence, honesty and critical thinking”
- Disseminating research results
- Collaborating with others (where appropriate)
- Identifying training & learning opportunities
- Behaving honestly and ethically

BIG responsibility!

- Research Misconduct
- Authorship & Allocation of Credit

RESEARCH ETHICS

Why should we care?

- Research touches ***people's life and life experience***!
- Research affects the ***research community*** and the whole field
- Research highly influences ***researcher's career***

Ethical guidelines for research

RESEARCH MISCONDUCT

What's Research Misconduct?

"… *fabrication*, *falsification*, or *plagiarism* in proposing, performing, or reviewing research, or in reporting research results."*

- If committed intentionally!
- Doesn't include honest error or difference of opinion.

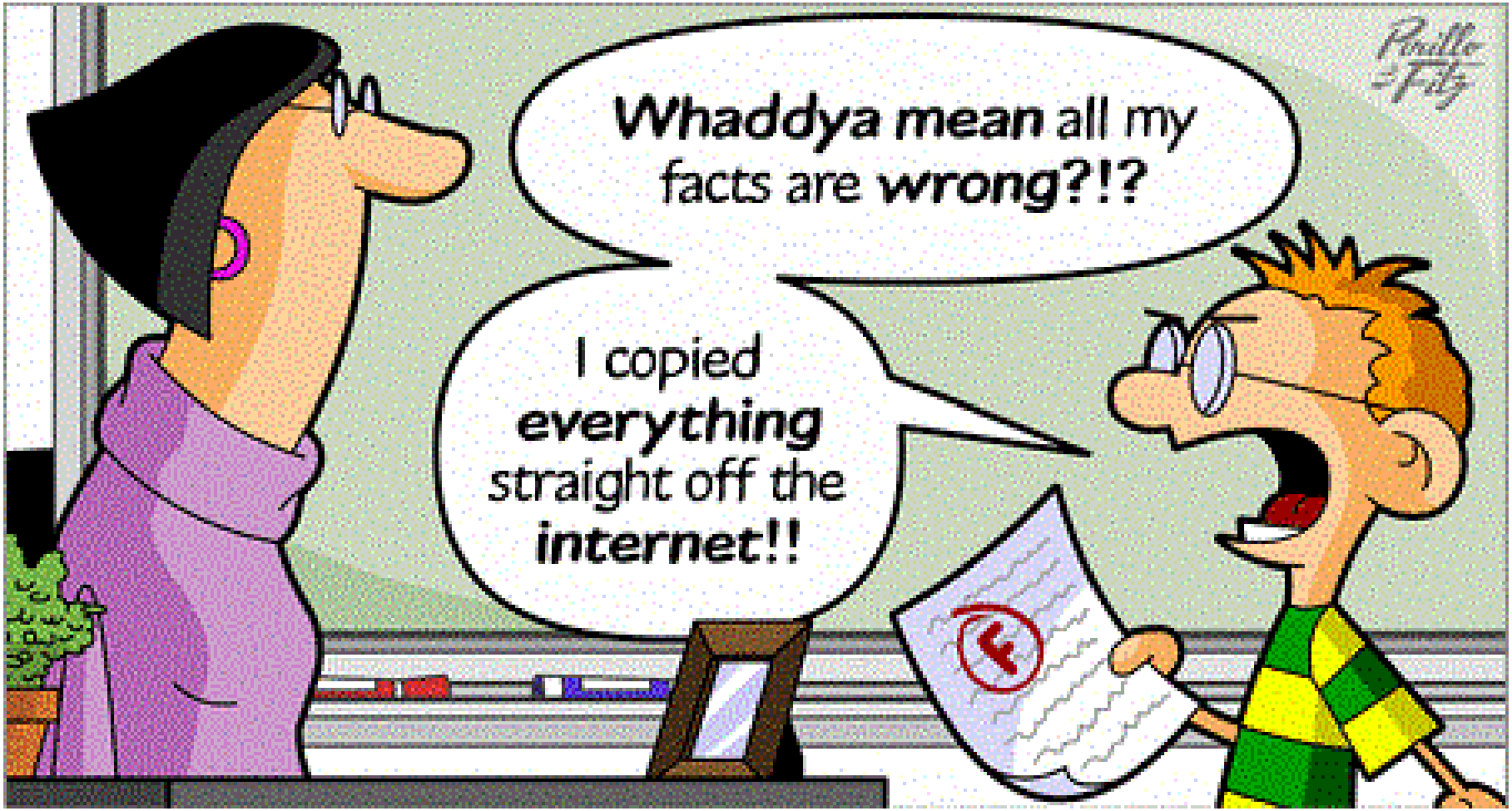
*Widely-adopted definition of "US Office of Science and Technology Policy"

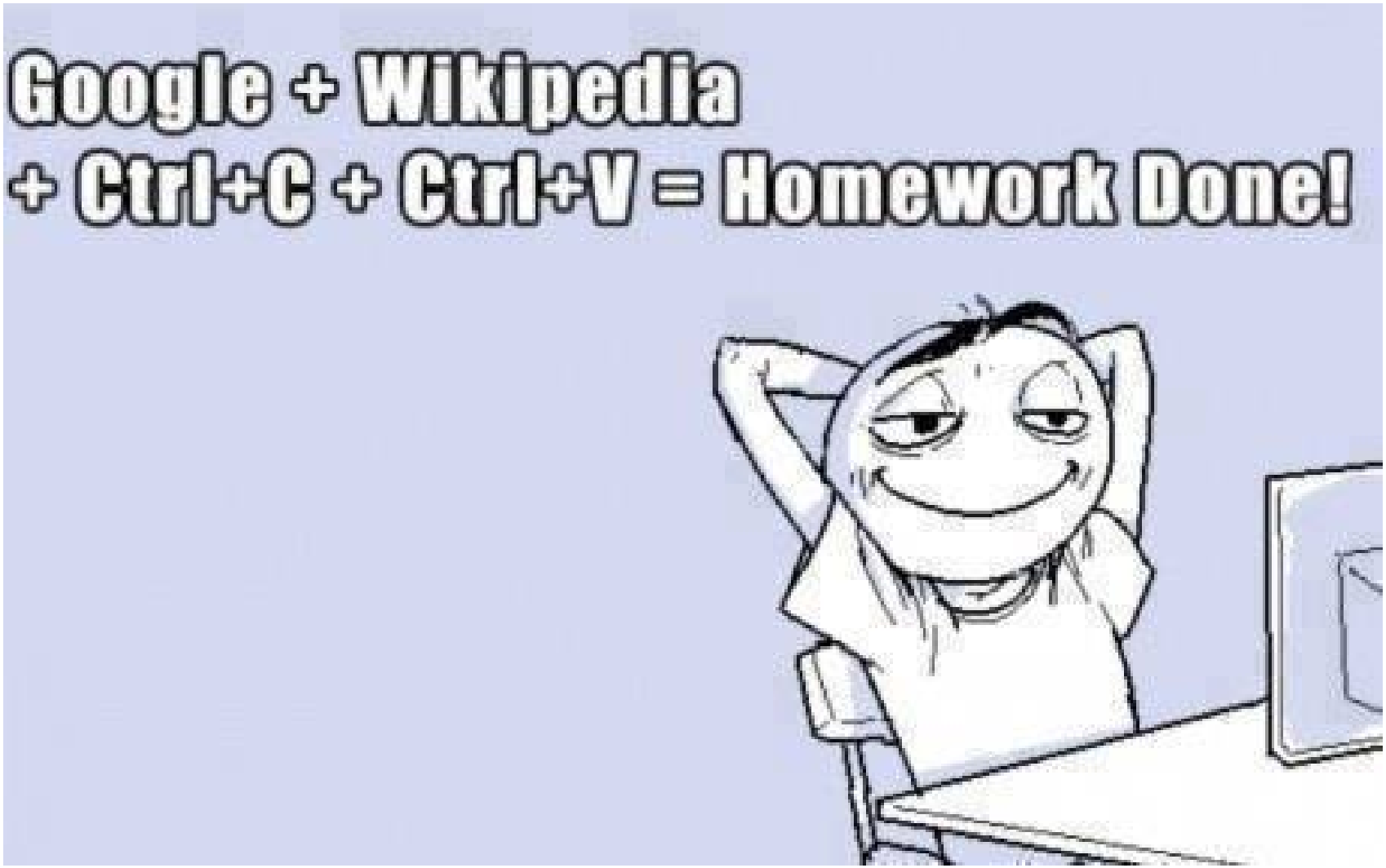
Fabrication

- **… is “making up data or results”.**
- Datasets
- Results
  - Lab report
- Publications
  - “Submitted” instead of “under-preparation”
- Job positions
  - “Research Scientist” instead of “Post-Doc” or “RA”

Falsification/Treatment of Data

- **… is "manipulating research materials, equipment, or processes, or changing or omitting data or results."**
- Making it more nice/appealing!
- Hiding data!
- Hiding results


Whaddya mean all my facts are wrong?!?
I copied everything straight off the internet!!
F


Google + Wikipedia
+ Ctrl+C + Ctrl+V = Homework Done!

Plagiarism

- … is “the appropriation of another person’s ideas, processes, results, or words without giving appropriate credit.”
- **Put your name on YOUR OWN work !!**
- Copying
- Paraphrasing
- Self-Plagiarism … why?

Broader Definition of Research Misconduct

- Abuse of confidentiality in peer review
- Failure to allocate credit appropriately in scientific publications
- Failure to report misconduct
- Retaliation against individuals who report misconduct
- Not observing regulations governing research
- …..

This is a VERY SERIOUS matter!

Watch Out !!!

Anyone who engages in these behaviors is …

- Putting his/her **degree** and **career** at risk
- Gaining bad **reputation**
- Missing **learning** opportunities
- Not acquiring important **skills**
- threatening the **reputation of his/her institute**
- threatening the **overall reputation of science**

AUTHORSHIP & ALLOCATION OF CREDIT

Authorship and Allocation of Credit

- List of authors indicates **who has contributed** to the work
  - Can be ***difficult***, but ***important***!
    - ***Early*** frank and open discussion
  - **Conventions may differ** among disciplines
- Each author needs to be confident of the accuracy of everything in the paper ➔ accountability

Authorship Policy!

Policies at most scientific journals state that

"a person should be listed as the author of a paper ***only if*** that person made a ***direct*** and ***substantial*** intellectual ***contribution*** to the:

- design of the research,
- the interpretation of the data,
- or the drafting of the paper

Allocation of Credit

- Credit is explicitly acknowledged in **three places**?
  - in the list of **authors**
  - in the list of references or **citations**.
  - in the **acknowledgments**

Authorship

- Authorship should involve only ***those who contribute directly***.
- **Gift Authorship**: **inclusion** of authors who did not contribute significantly to the study
  - Dilutes credit due people who actually did the work!
  - Hierarchy (expectation / favor)
  - Colleagues (increase publications)
- **Ghost Authorship: absence** of real authors
  - Misleads readers/community!
  - Hierarchical / political / personal reasons

Citations

- Citations are **part of the reward system of science**.
- Can affect future careers of researchers.

- **Self-citation ??**

Research Ethics … What Else?

- Advising and Mentoring
- The Treatment of Data
- Mistakes and Negligence
- Responding to Suspected Violations of Professional Standards
- Human Participants and Animal Subjects in Research
- Laboratory Safety in Research
- Sharing of Research Results
- Intellectual Property
- Conflict of Interest
- The Researcher in Society

Remember …

« ومَن غشَّنا فليس منَّا »

الراوي: أبو هريرة المحدث: مسلم - المصدر: صحيح مسلم - الصفحة أو الرقم: 101
خلاصة حكم المحدث: صحيح

OPEN DISCUSSION

Reference

We should all read this!

"***On Being a Scientist: A Guide to Responsible Conduct in Research***", National Academy of Science, US, 3rd Edition, 2009.

It would be unethical if I didn't ☺

Conclusion

- Research is fun!
- You will learn a lot in doing research.
- Research is a responsibility!
- Following professional standards is a MUST to succeed.
- Know your **rights** AND know your **duties** ☺

Acknowledgement

- **All of my research group**
- In particular:
  - **Maram Hasanain** (discussions, ideas, and feedback)
  - **Hind Al-Merekhi** (discussions)

It would be unethical if I didn't ☺

What's next?

LaTeX: Writing Professional Scientific Documents

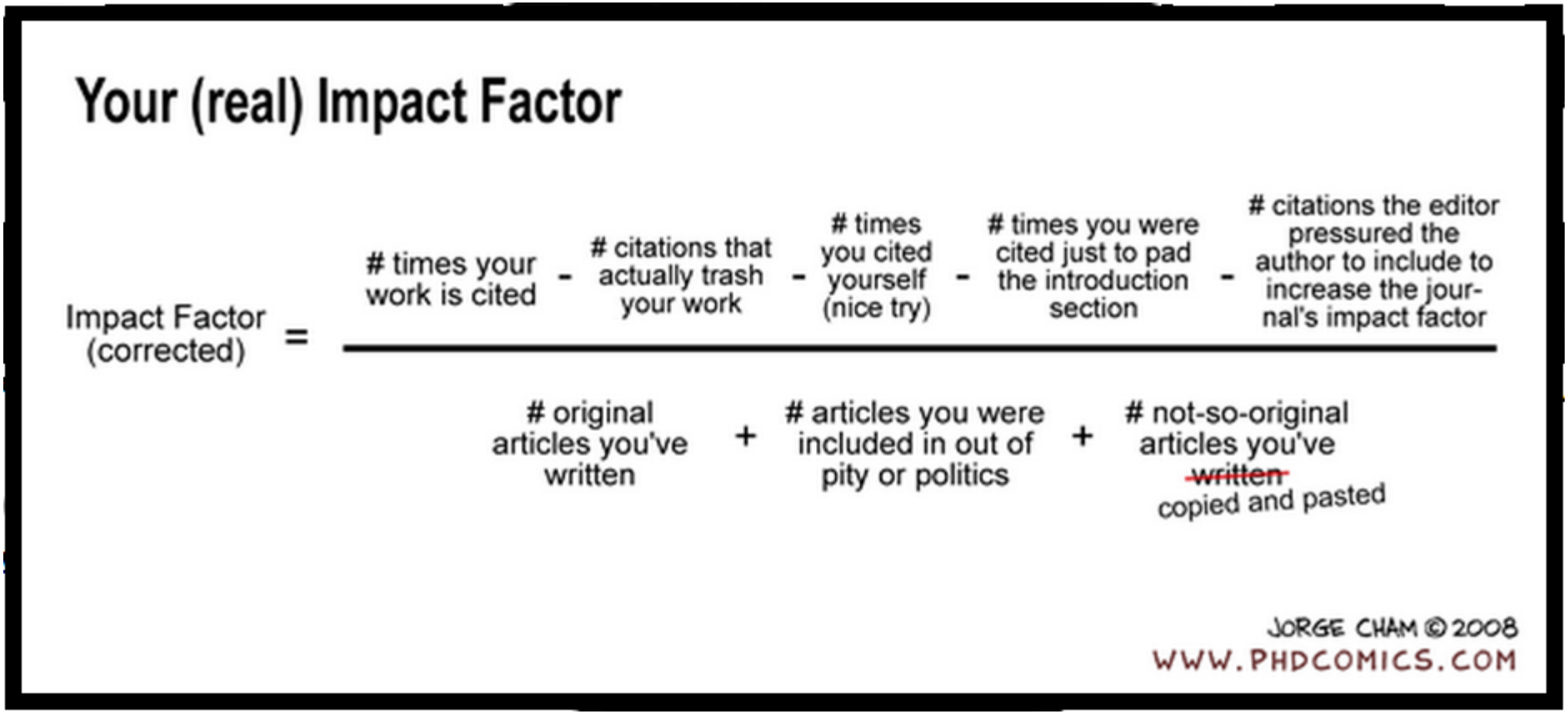
Tomorrow: 3:45pm-4:45pm

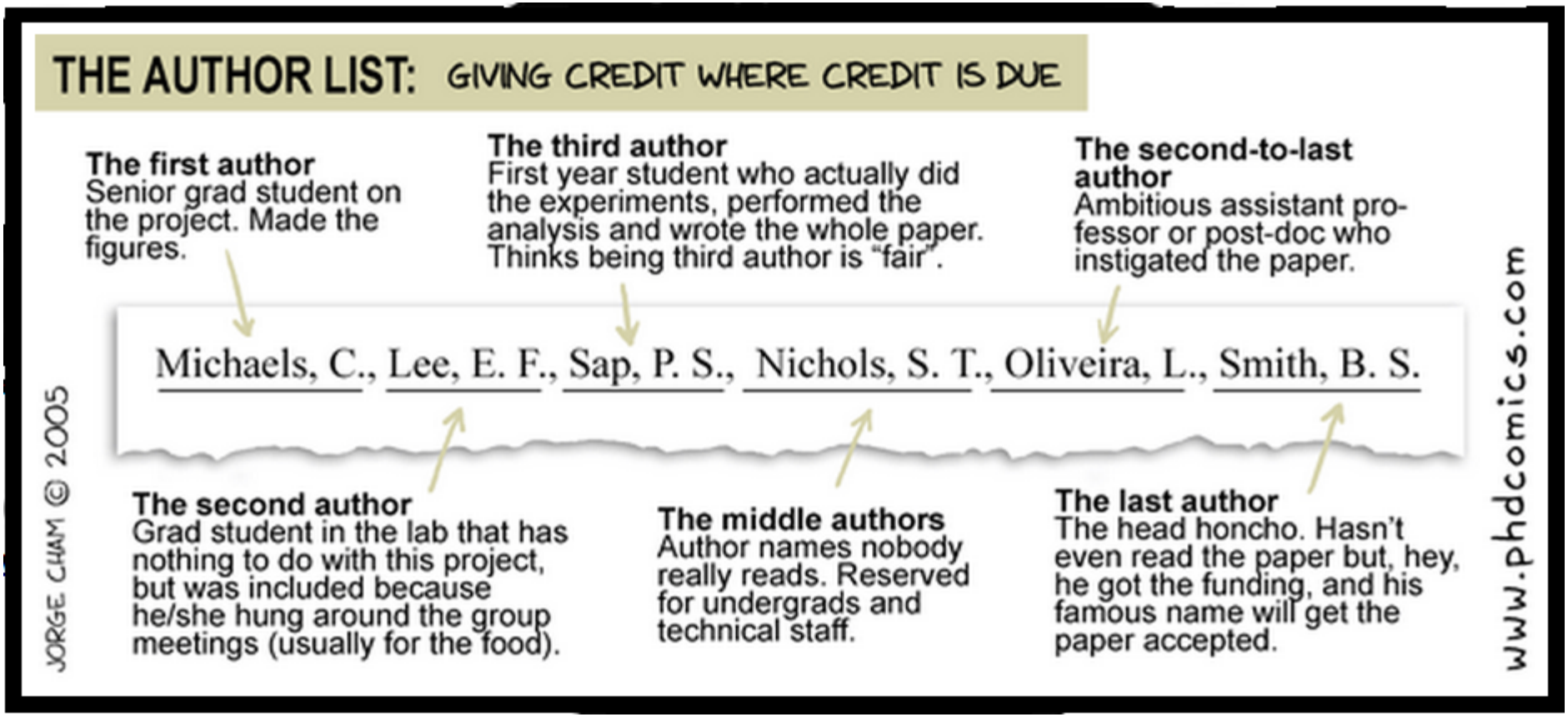
Engineering Bldg., I-110 (Corridor 9)

اللهم علّمني ما ينفعني
وانفعني بما علمتني
وزدني علما

جامعة قطر
QATAR UNIVERSITY

Thank You!


Your (real) Impact Factor
Impact Factor (corrected) =
times your work is cited
- # citations that actually trash your work
- # times you cited yourself (nice try)
- # times you were cited just to pad the introduction section
- # citations the editor pressured the author to include to increase the journal's impact factor
original articles you've written
+ # articles you were included in out of pity or politics
+ # not-so-original articles you've ~~written~~ copied and pasted
JORGE CHAM © 2008
WWW.PHDCOMICS.COM


THE AUTHOR LIST: GIVING CREDIT WHERE CREDIT IS DUE
The first author
Senior grad student on the project. Made the figures.
The third author
First year student who actually did the experiments, performed the analysis and wrote the whole paper. Thinks being third author is "fair".
The second-to-last author
Ambitious assistant professor or post-doc who instigated the paper.
Michaels, C., Lee, E. F., Sap, P. S., Nichols, S. T., Oliveira, L., Smith, B. S.
The second author
Grad student in the lab that has nothing to do with this project, but was included because he/she hung around the group meetings (usually for the food).
The middle authors
Author names nobody really reads. Reserved for undergrads and technical staff.
The last author
The head honcho. Hasn't even read the paper but, hey, he got the funding, and his famous name will get the paper accepted.
JORGE CHAM © 2005
www.phdcomics.com