CHALMERS SUSTAINABILITY DAY 23 OCTOBER 2018
FAKE NEWS – GIMMICKS AND PSEUDOSCIENCE

SHEILA GALT - COMMUNICATION AND LEARNING IN SCIENCE
WORKSHOP - THE UNIVERSITY’S ROLE IN SOCIETY
WORKSHOP AGENDA

• Introduction – What do we mean?
• A few examples
• Group activity 1 – Chalmers-relevant examples
• What’s the harm? – Sustainability relevance
• Group activity 2 – What can/should one do?
• Prevent, prepare, act, react
• Individual activity – This is what I could/should/will do!
FAKE NEWS, GIMMICKS, PSEUDOSCIENCE

• Fake news:
  • False "facts" spread as news
  • An excuse to ignore facts

• Gimmicks:
  • Often meant to mislead
  • Magical thinking among customers

• Pseudoscience:
  • Bad science, believed in by practitioners and followers
ASPECTS TO TAKE INTO ACCOUNT

• Placebo effect
• Cherry picking
• Anecdotal evidence
• Source criticism
• Too good to be true?
A FEW EXAMPLES

• Climate sceptics
• Anti-vaccination
• Colloidal silver
• Quantum mysticism
• Homeopathy
• Magnetic bracelets
CHALMERS RELEVANCE

• Education
• Research
• Utilisation
• Internal environment
GROUP ACTIVITY 1

• Discuss Chalmers-relevant examples
• What fake news, gimmicks, pseudoscience etc. should Chalmers students and employees be aware of?
• Categorize relevance:
  • Education
  • Research
  • Utilisation
  • Internal environment
  • …other relevance

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GROUP ACTIVITY 1 – RESULTS

What fake news, gimmicks, pseudoscience etc. should Chalmers students and employees be aware of?

EDUCATION:

• gender science in general; gender as a social construct; equality of outcome instead of opportunity; climate as social science

• Politics makes equality lack from edge when interacting.

• Studies funded by corporations to produce the result they want, e.g. chemical company proving their product is harmless.

• Cereals bad for your health; Human influence on climate issues; Cows' effect on climate

• Food related - i.e. ”all carbohydrates and/or cereals are bad for your health”

• ufology

• Training on how to approach blurry issues? E.g. Type A Influenza anti-vaccination/vaccination, apathy in immigrant children, side-effects of vaccination against virus related to utero cancer
GROUP ACTIVITY 1 – RESULTS CONT.

What fake news, gimmicks, pseudoscientific etc. should Chalmers students and employees be aware of?

RESEARCH:

• Critical thinking and the scientific method are not taught as much in schools now.
• Electric vehicles worse than internal combustion engines
• Researchers "sponsored" by companies. How much can the company decide? For example tobacco companies sponsoring

UTILISATION:

• Kan budskapet och resultaten bli fel när vi försöker göra den populärvetenskaplig

OTHER:

• Är avsändaren Chalmers en garant för att allt är ok, dvs inte fake?
WHAT’S THE HARM? – SUSTAINABILITY?

• Why not allow magical thinking?
• If people want to spend money on junk …

• Health care that really works, better for all!
• Fact based political decision-making, best for all!
• Earth care that really works, necessary!
GROUP ACTIVITY 2

• Discuss what one can/should do.
• Focus on your role as a Chalmers student or employee.
• Categorize actions within:
  • Education
  • Research
  • Utilisation
  • Internal environment
  • …other actions

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GROUP ACTIVITY 2 – RESULTS

What can/should one do as a Chalmers student or employee?

EDUCATION:

• science is self correcting, so a return to classic scientific method is sufficient
• Become to teach technological anquering
• Teach basic courses on the scientific method and critical thinking
• Inform students about how to find/use reliable sources with different perspectives, e.g. theconversation.com
• Addressing issues, social debates
• We can help students at all level to understand the value of knowledge eg "rädda ägget" helps to understand the value of physics
• Erbjuda utbildning i källkritik, kritiskt tänkande på alla nivåer
• Referencing and plagiarism; Critical thinking; source evaluation
What can/should one do as a Chalmers student or employee?

**RESEARCH:**

- demand evidence
- Outreach with valid results, e.g. contribute on online platforms
- Get involved in societal debates, write popular articles in mass media, TV and Radio appearances
- Promote interdisciplinary debate
- Prata om det!
- Metacognition
GROUP ACTIVITY 2 – RESULTS CONT.

What can/should one do as a Chalmers student or employee?

UTILISATION:

• Researchers should talk directly to the public - not rely on communicators distorting the message

• Talk to friends and family, challenging false ideas as they arise and sharing our expertise. Make the scientist human.

• Responsible external communication, not exaggerating. Balance, timing, quantity of communication. Helping reporters to understand and communicate messages correctly.

• se till att det vi visar upp verkligen har grund i fakta och får att bevis

• Prepare students to real life scenarios and work life (critical thinking, evaluation of resources)

INTERNAL ENVIRONMENT:

• Internal discussions, sharing information. Weekly ‘pseudoscience newsletter’

• Open Science
PREVENT, PREPARE, ACT, REACT

• Educate for awareness, readiness and courage.
• Communicate relevant facts understandably.
• React locally to keep high standards at Chalmers.
• React externally when pseudoscience becomes dangerous, especially within your field of competence.
• Remember psychology … what makes you listen?
INDIVIDUAL ACTIVITY

• This is what I could/should/will do!
• Write a reminder to yourself.
• If you are comfortable with sharing anonymously,

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INDIVIDUAL ACTIVITY - RESULTS

This is what I could/should/will do!

• I will try to take on the discussion whenever it appears. Respecting the other person (even if I think he/she is a twat.).

• work with critical thinking at elementary school and high school through, for example, save the egg, teknikåttan, young researchers, etc.

• Read my draft articles/pressreleases once more, making sure they are correct and well-balanced.

• Lead by example: admit openly and shamelessly when I am wrong.

• I will remind myself that no one owns the truth, at least to the best of my knowledge.

• Consider the ways you could be misinterpreted and preemptively work against them.

• Make sure I dare to engage in areas where I have knowledge, either professionally or acquired by interest; Still try to listen more than talk, but not get intimidated by aggressive attacks from eg climate deniers; Find weak spots in opponents arguments but don’t use the to bang someone in the head instead try to build them an escape route from their present belief; Look for good examples combining science with communication and there are many!
INDIVIDUAL ACTIVITY – RESULTS CONT.

This is what I could/should/will do!

• Not being afraid of coming into conflict with people who believe in fake news/pseudosciences.

• Be transparent about the information sources in science communication. Check out the Kialo communication/debate platform.

• Be careful with sharing things in social media that I don’t know the source of/background on. – Speak out/take the discussion – no matter in what situation/environment. – Be critical and look up things that sound too good to be true or seem to lack important information.

• Use my teaching to work with students on where they get their facts from and how to question their sources. Teach students to enter into societal debates; Be an active member of the acgool community and talk about these issues there; Remind myself and my colleagues to be active in the societal debate, both privately and professionally. Reach out with the research performed at the division, not only my own research.

• Double check sources of information and any evidence I saw published before sharing news with others.
FIND OUT MORE

• The Debunking Handbook
• What’s the harm? http://whatstheharm.net/
• Vetenskap och folkbildning, VoF  www.vof.se
• Skeptical Science  www.skepticalscience.com
THANK YOU FOR PARTICIPATING

• May the facts be with you!
  … and remember
  … it used to be a fact
  … that the earth was flat!
NOTE ON PUBLICATION OF RESULTS

• Workshop participants provided their input anonymously.
• All participants were informed that entering their input would be considered as consent to publish the results of the workshop.
• The tool used to collect workshop results was the online service "Socrative" where participants logged on as anonymous "students".
• The wording of the input reported here has not been changed, with no attempt made to correct spelling etc.
• The order of the input is exactly the order in which it was uploaded by the workshop participants, with no attempt made to sort the input.