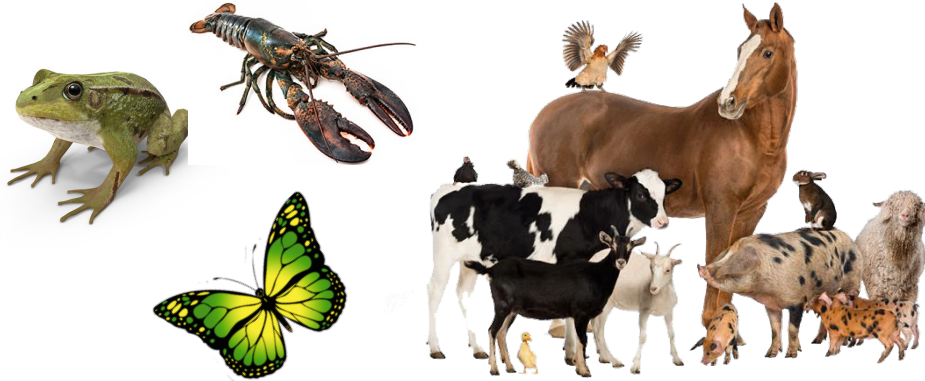




A biologist among us

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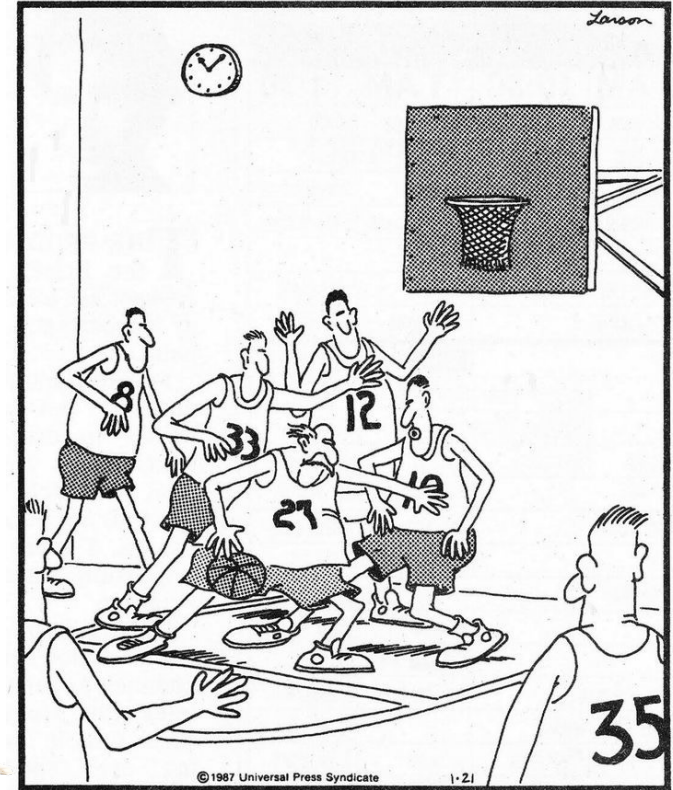


About me

- From Siljan, Telemark
- 46 years old with two kids, a husband and a cat
- Grew up in the woods and in the sea(!)
- Studied nature and all creatures, great and small from a very early age
 - Observed them in their natural environment and drew them
 - Caught them and drew them
 - Dissected and drew them
 - Read about them
- Was determined to become a biologist from the age of 7



THE FAR SIDE—by Gary Larson



Unbeknownst to most historians, Einstein started down the road of professional basketball before an ankle injury diverted him into science.

The studies

1995 Graduated from high school, Skien Videregående Skole, Skien, Norway. Specializing in biology, English and German.

1996 Spent a year in South America

1997-2001 Bachelor degree in marine biology, NTNU, Trondheim

2001-2005 Cand. Scient. degree in marine biology, NTNU, Trondheim, Norway on: "Detection of monthly variation in marine red, brown and green macroalgae by means of *in situ* video, epifluorescence microscopy and numerical digital image analysis."

2007-2014 Doctoral degree in marine photo-biology and bio-optics, NTNU, Trondheim, Norway on: "Photoacclimation mechanisms and light responses in marine micro- and macroalgae."

Work career

2007-2014 PhD project “Photoacclimation mechanisms and light responses in marine micro- and macroalgae”, financed by the FUGE platform of the Norwegian Research Council (NFR), teaching the following courses:

- AB323, Light Climate and Primary Production in the Arctic
- AB202, Marine Arctic Biology
- BI3017- *Biovisualisation techniques*, NTNU
- BI1002-Flora and Fauna in Norwegian ecosystems
- BI2036-Marine Biodiversity, incl. preparation of seafood dishes
- BI2012, Cell Biology
- 5 publications + frontpage of American Journal of Phycology

Maternity leave from **May to February 2009-2010** and **June to April 2011-2012**

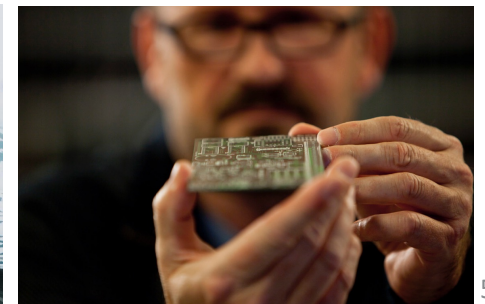
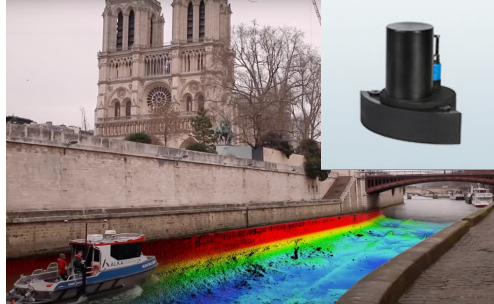
2014-2015 Researcher on Arctic Ecosystems and Remote Sensing Technology for Environmental Monitoring at Equinor’s Research Center Rotvoll, Trondheim:

- Project administrator
- Project leader
- Field planner

2015- Environmental advisor, and project manager R&D and sales, NORBIT Aptomar AS, Trondheim

NORBIT Group ASA

- HQ: Lade Technopark in Trondheim, and factories in Trondheim, Selbu and Røros.
- Big industry concern that delivers products, systems, solutions and services based on electronics.
 - Oceans: Tailored technology solutions to global maritime markets (sonars, cameras, radars and software)
 - Connectivity: Solutions for asset identification, monitoring and tracking within traffic
 - Product Innovation and Realization: R&D services and contract manufacturing to key customers
- Manufacturing in Norway
- Offices in Norway, Poland, Hungary, Italy, UK, Austria, Sweden, Singapore, Brazil and USA
- 400 employees worldwide



The difference between a career in Academia versus the Industry/private business

Academia

Responsibilities:

- Applying for grants/funding
- Conducting self-directed research
- Publishing papers
- Teaching courses
- Mentoring students

Collaboration:

Team-work oriented, but with the freedom to (to a large extent) choose when, and with whom, you collaborate.

Workplace Culture:

Highly research- and discovery-focused, and much research is done for the sake of learning.

Flexibility:

Freedom to dictate your own schedule, choosing when to teach, conduct research, and publish your work.

Intellectual Freedom:

Intellectual freedom, free from the constraints of short-term deadlines.

Career Advancement:

Difficult if only a handful of universities that may specialize in your discipline, or are actively hiring in a given year (if they hire at all).

Employment form:

Temporary. Very difficult to get a permanent position

PhD:

World-wide well-recognized degree

Salary:

On average, an academic like a post doc make approximately 500 000 NOK per year



Industry/private business

Responsibilities:

Mostly focused on applied research. You must be able to develop projects that meet the company goals or customer requirements as you support the business plan of the company.

Collaboration:

Working toward a larger, shared goal. It's critical for researchers to be able to collaborate and work as a team.

Workplace Culture:

Typically more deadline-driven, as teams work to the business-focused problem. This work allows researchers to feel a sense of immediate impact in real-life applications.

Flexibility:

Mostly fixed on a standard 8-to-16 workday.

Intellectual Freedom:

Funding and more state-of-the-art resources will be supplied by the larger organization, focused on research and development. Often tough deadlines.

Career Advancement:

Industry career opportunities are broader than in academia and can range from research and development to product- and project management, product design, sales, and marketing.

Employment:

Full-time or temporary as a consultant.

PhD:

Over-qualified?

Salary:

Start salary in an industry/private business varies a lot, but can typically be around 650 000 NOK for a person with a doctoral degree



Why is a PhD valuable within the industry?

- The top three skills for every industry position are:
 - Critical thinking
 - Complex problem solving
 - Correct decision-making
- People with a PhD don't fear failure, they learn from it
- They know how to deal with challenging management and mentorship (or complete lack of it)
- They work well with all kinds of people
- They are comfortable with uncertainty
- They don't just master the use of existing information, they add to it
- They thrive on both competition and collaboration
- Not afraid to do things you don't know anything about, and be comfortable with it
- Your opinion is highly evaluated
- Most funding-bodies require a Phd when applying for a project
- They are qualified for "any job"

Potential challenges with a PhD's in the industry

- Domain-knowledge
- R&D driven by:
 - Customer requirements
 - General operational needs
 - Deadlines
 - Budget
- Collaboration require mutual respect:
 - Internally
 - With customers



Thank you for the attention!