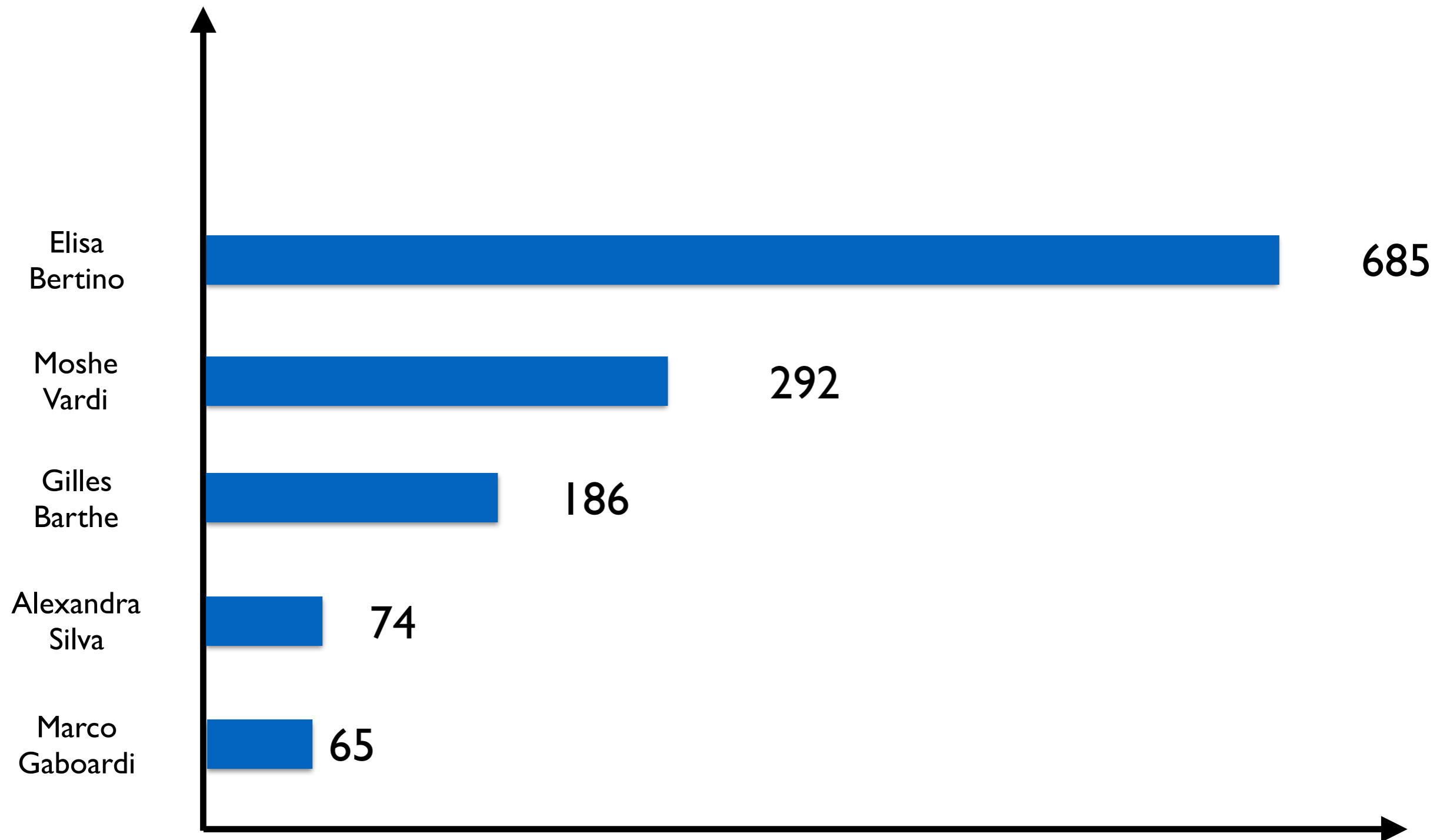


Research as a collaborative effort

Marco Gaboardi

University at Buffalo, SUNY

Number of collaborators





Building something together



An example

Quest for Full Abstraction for PCF

A model is fully abstract iff

$$\llbracket t \rrbracket =_{\text{den}} \llbracket u \rrbracket \iff t \approx_{\text{obs}} u$$

denotational
model

operational
model

An example

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Some results: Different models based on different notions of functions:

- stable models
- sequential algorithm models
- coherent models
- hypercoherent models

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The solutions: Using game semantics models. [Hyland, Ong] [Abramsky, Jagadeesan, Malacaria] [Nickau] (Church Award 2017)



Andrew Baker

Research as a collaborative effort

Marco Gaboardi

University at Buffalo, SUNY

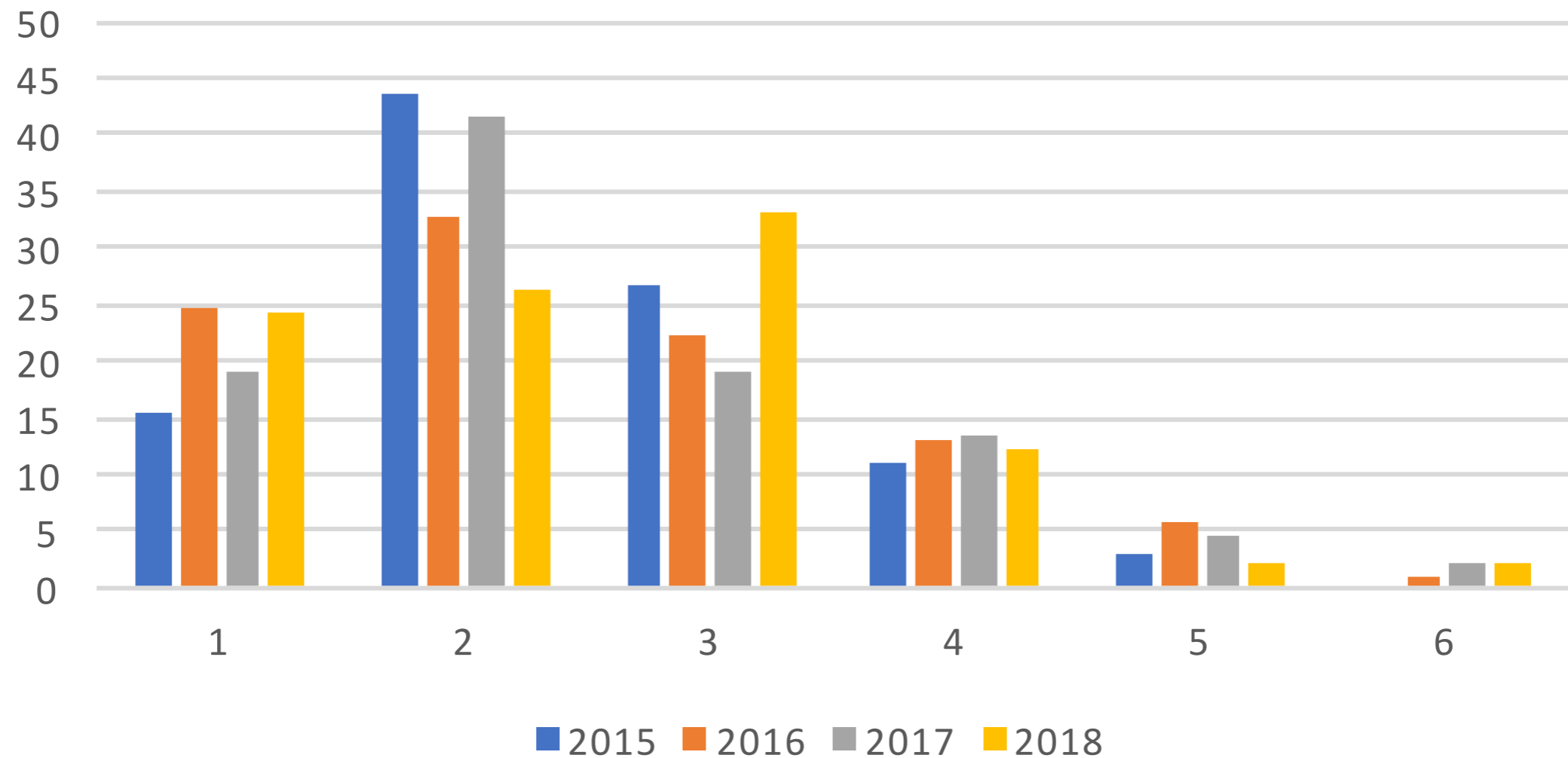
Some advices on how to survive in collaborative research...

Marco Gaboardi

University at Buffalo, SUNY

Another statistic

Distribution of number of authors for LICS 15-18



**How to establish
collaborations?**

Advice 1

**Learn from
your advisors!**

- Learn a method,
- Learn the passion,
- Learn to master a technique.



Advice II

Read papers!

This will help you identify who:

- works on similar topics,
- can have answers you may need,
- may need answers you have.

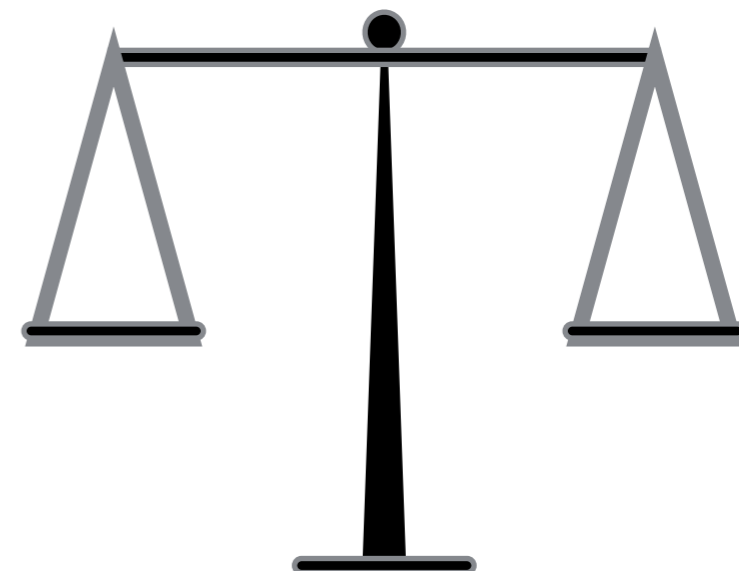


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Advice III

Take action!

- Talk with people about your research,
- Don't expect that people will come looking for you.
- Get out of your comfort zone.



Advice IV

Be part of the community

- Stay connected,
- Learn what other people do by talking with them,
- Try to understand the problems other people are excited about.



How to collaborate?

Advice V

Share your ideas!

- To build something, you need to play your part,
- Don't be afraid of being wrong, we have all been there,
- You are more than one good idea.



Advice VI

Learn from your collaborators!

- Learn new problems,
- Learn their passions,
- Learn to master other techniques.



Advice VII

Use
technology!

- Take a scientific approach to “How to collaborate”,
- How can you make it the most efficient?
- Try to make it a natural everyday process.



stack overflow

Overleaf



Advice VIII

Don't forget yourself!

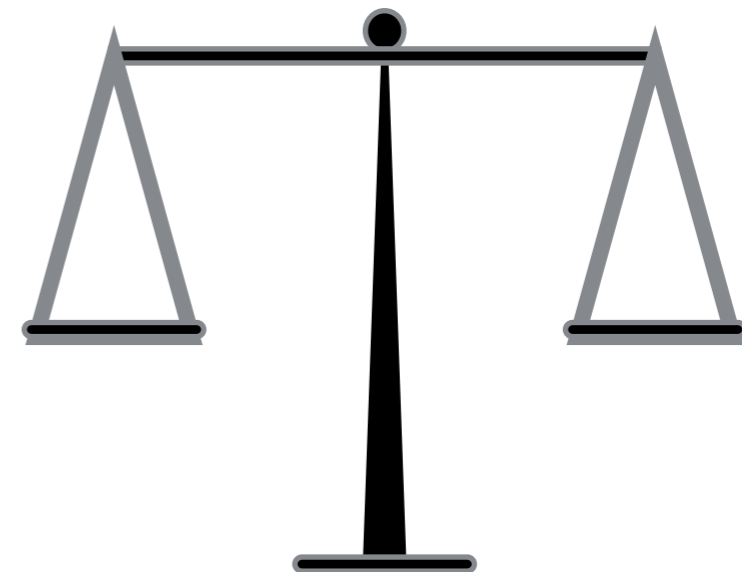
- Understand what are your unique strengths,
- Keep yourself excited about your research,
- Find a good balance between individual research and collaborative research,



Advice VIII

Don't forget yourself!

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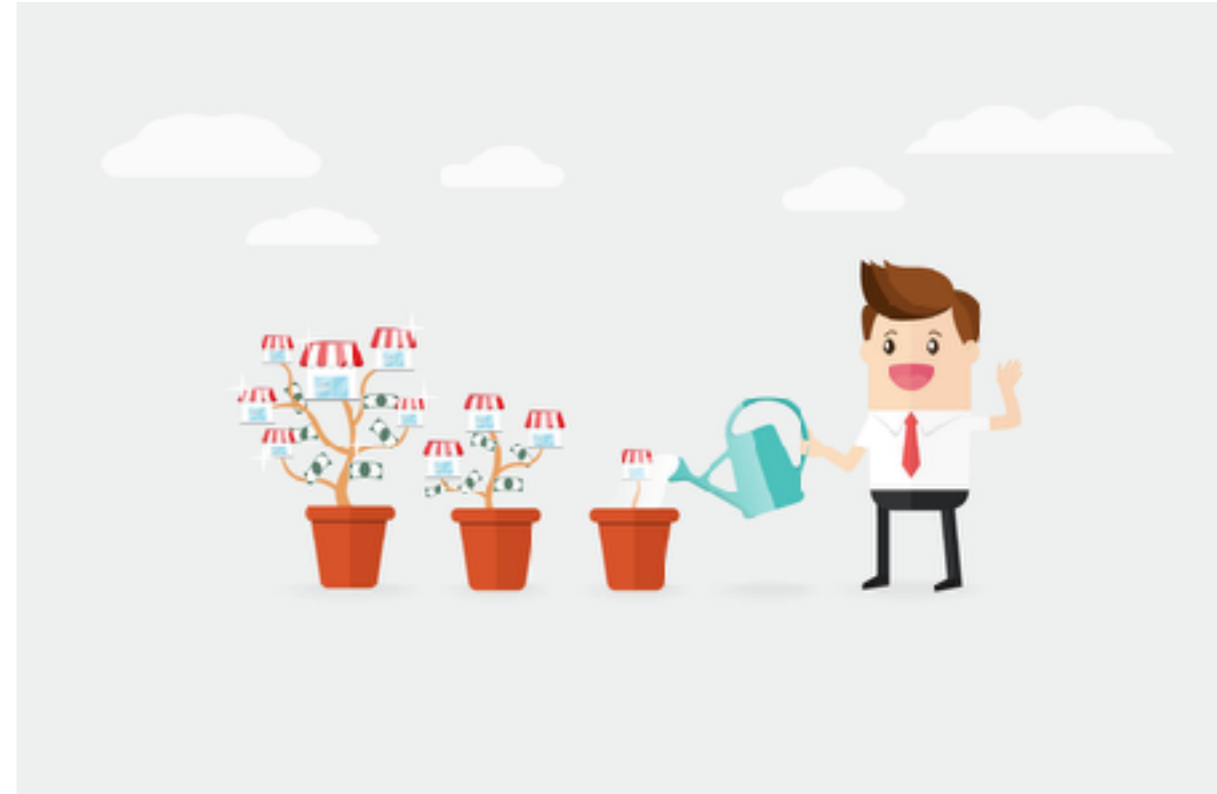


Collaboration with
people from other
disciplines?

Advice IX

Expand your interests!

- What other areas do you find exciting?
- What would be a good application for your research?
- Collaborating with people from different areas can be very rewarding!



Advice X

Be patient!

- Talking with people with different background can be challenging,
- Explaining them basic concepts can be time consuming,
- The same will hold for you for concepts from the other areas.



Wrapping up

Building something together



Collaboration
is fun!
Enjoy it!