

# **The role of communities of practice for career development in computational statistics**

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# Roadmap

- Communities of practice (CoPs): what are they?
- Why are CoPs important and how can they be sustained?
- Some CoPs in CompStat and Data Science
- Some guidelines in building inclusive communities and events

# What are communities of practice? (I)

*Communities of practice are **groups of people** who share a **concern** or a **passion** for something they **do** and learn how to **do** it better as they **interact regularly**. (Wenger-Trayner)*



- Domain of interest
- Community
- Practice
- E.g., book clubs
- E.g., professional conference
- E.g., club of friends
- Community of practice**

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- Examples: group of researchers working on a similar problem who meet on a regular basis, meetup groups etc.

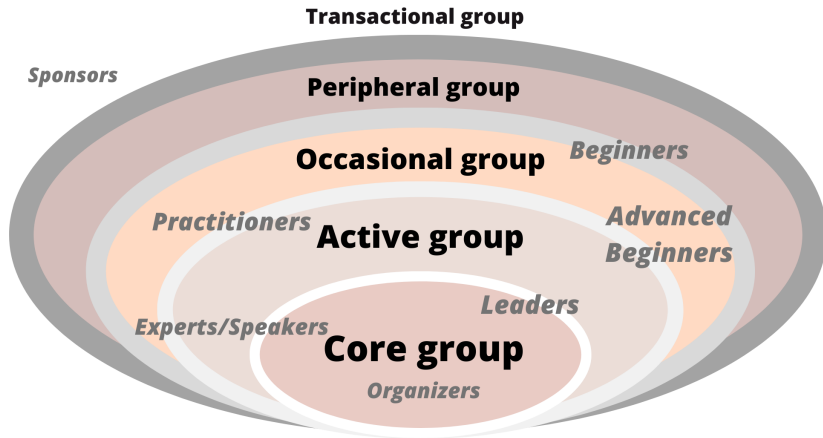
# What are communities of practice? (III)

More formally: Concept from social or situated learning theory (Lave and Wenger 1991; Brown and Duguid 1991; Orr 1990; Constant II 1987)

- CoPs are used to describe the process of learning and the spread of knowledge.
- Situated view to learning: *learning is a relational property enacted by groups of people in context and in interaction with one another* (Lave and Wenger 1991)
- CoPs are groups in which a constant process of legitimate **peripheral participation** takes place (Lave and Wenger 1991).



# Community composition: Foster inward mobility!



**Figure 1:** Inspired from [Wenger-Trayner](#), Stevens et al. (2018)

# Goals of CoPs

(Wenger and Snyder 2000)

- help to solve problems quickly
- develop professional skills
- set and transfer best practices

# Member benefits

(Wenger and Snyder 2000)

- **short-term:** help with challenges, access to expertise, confidence, meaningful work, social aspects
- **long-term:** personal development, enhanced reputation, professional identity, networking

# Techniques to foster learning-oriented CoPs

1. improve **connectivity** – linking people with others who have similar practices (social networking, directories or profiles)
2. access to **content** – shared repository of information that is used by the community in its practices
3. supporting **conversation** – providing tools for discussing with others in the community
4. providing information **context** – providing awareness of the information context of various resources

based on the C4P model in Kilner (2004) and C. M. Hoadley and Kilner (2005)

# CoPs in CompStat and data science

## ***Skills:***

***programming, software  
development,  
data analysis,  
math/stats/ML, hardware,  
(technical) writing,  
creativity,  
communication,  
team work***

## ***Good practices:***

***sustainable  
software development,  
reproducible and  
extensible research,  
promoting open science,  
transparent and  
impactful scientific  
results***

**Interdisciplinary field:  
high potential for mobility across CoPs**

# Meetup groups

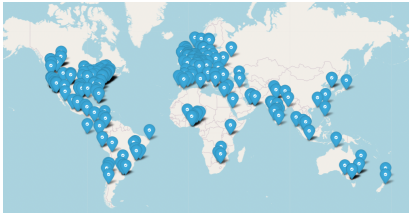
An accessible format for CoPs in CompStat and data science:  
**meetup groups**

- [Meetup.com](https://www.meetup.com) is a platform for finding and building local communities
- Regular events (online/in person) can be organized through the platform.

Tip: Many meetup groups organize joint events, so keep an eye for those to discover new communities.

# Some relevant meetup groups

- R User Local Groups (see also [R Consortium](#))
- [R-Ladies](#), a world-wide organization to promote gender diversity in the R community
  - offers an online directory of R-Ladies,
  - global github repository
  - supports local chapters who organize events
- [Python User Groups](#)
- [PyLadies](#), a global group with the focus on getting more women involved in the Python open-source community
- [PyData Groups](#)
- [Julia Users Groups](#)
- [Julia Gender Inclusive](#)









**Figure 2:** Active R User and R-Ladies Groups, [Dashboard by Ben Ubah](#)



**Figure 3:** PyData Groups



# Building inclusive CoPs & events

<p>Core team</p>  <p>Motivated individuals from diverse backgrounds</p>	<p>Code of conduct</p>  <p>Create, Communicate, Take seriously</p>	<p>Language</p>  <p>Mind gendered language, transgender terminology, metaphors ...</p>
<p>Speakers &amp; Experts</p> <ul style="list-style-type: none"><li>• Diverse network means pool of experts,</li><li>• Do more outreach</li><li>• Mix up presentation styles,</li><li>• Images should include underrepresented groups.</li></ul> 	<p>Venue, time slot &amp; drinks</p> <ul style="list-style-type: none"><li>• Accessible venue, good internet, gender neutral loos?</li><li>• Times that work for people with kids / Mix up event times</li><li>• Offer childcare if you can</li><li>• Be mindful about drinks</li></ul> 	<p>Further tips</p> <ul style="list-style-type: none"><li>• Allow a way for people to opt out of being photographed</li><li>• Create an FAQ</li><li>• Schedule the events in advance</li><li>• Keep track of stats!!!</li></ul> 

**Figure 4:** Inspired from [WordCamp Organizer](#) and Andy Burgin on [Medium](#)

# Thank you!

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Slides are available at:

<https://github.com/lauravana/COMPSTAT2022>

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