

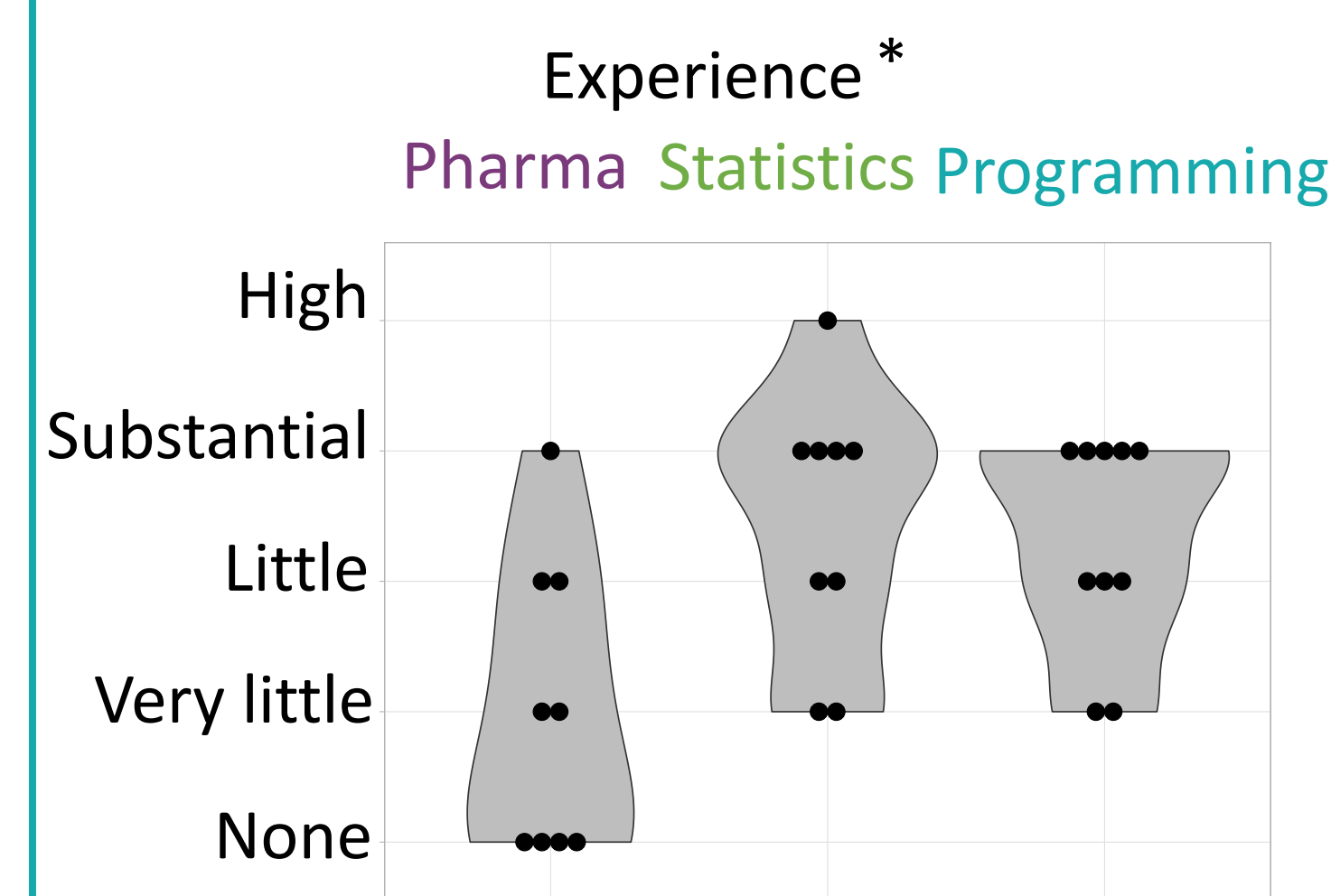
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Motivation

- Continuous company growth requires new employees in a frequent manner, but there is a lack of skilled and experienced workers
→ Include and train career changers and fresh graduates
- Advantages: benefit from diverse backgrounds to drive innovation and ensure company quality and integrity
- Disadvantage: investment into professional training
→ Need for a fast and efficient trainee program for the pharmaceutical industry

Determine and address knowledge gaps



Prerequisite: experience in programming (SAS or R), statistics or data analysis

Gaps:

- Knowledge about the pharma industry
- Clinical study background & specifics (statistics, graphs)
- SDTM, ADaM, TLF programming etc.

*first survey with n=10 participants

Our solution: The Chrestos Cosmos

Gain knowledge via analysis of a fictional clinical drug trial:

- Documentation in **clinical trials** e.g. statistical analysis plan
- Classical **statistical analyses** e.g. time-to-event
- Programming** (SAS or R, with and without macros, 1st and 2nd programming)

Flexible length: 2- day introduction vs. 2-week education

Flexible order of visiting different planets based on previous knowledge

Especially in the CRO field it can be done alongside starting at the client company

Usable as further education program for experienced colleagues

May help establish a feedback culture early on

Reusable for each new trainee

Introduction to company templates and internal macros

Including introduction to different environments e.g. SAS Studio, Jupyter Lab, R Studio, Rmarkdown

Company gets flexibility in the appropriation of resources (especially the case for CROs)

Get to know (new) colleagues / networking within company

Supervision with limited hands-on-time for supervisors; chance to ask questions for trainees

Tips for beginners

- Make a list of abbreviations and vocabulary and learn it by heart
- Look for cheat sheets for programming
- Take Coursera online courses for SAS, R or statistics
- Achieve the SAS base certificate
- Form learning groups
- Introduce yourself and your background to your new colleagues
- Ask for recommended papers, books, and websites, e.g.
 - LexJansen.com
 - SAS programming in the Pharmaceutical Industry - 2014 Jack Shostak
 - PharmaSUG 2015 - Paper CP04 CRO, TLF, SOP? OMG!: A Beginner's Guide to the Clinical Research Organization
 - Paper PO12 Pharmaceutical Programming: From CRFs to Tables, Listings and Graphs, a process overview with real world examples



Tips for experienced colleagues or companies

- Introduce yourself, your work and task field e.g. schedule a short meeting with the new trainee
- Provide a knowledge platform via intranet or something similar
- Talk about your projects and problems (reliability, knowledge exchange)
- Mentoring
- Share your experience e.g. in preparing for the SAS base certificate
- Provide an overview of expertise of each employee / task group
- Share relevant guidelines



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