

# WorkflUX: The Workflow User eXperience

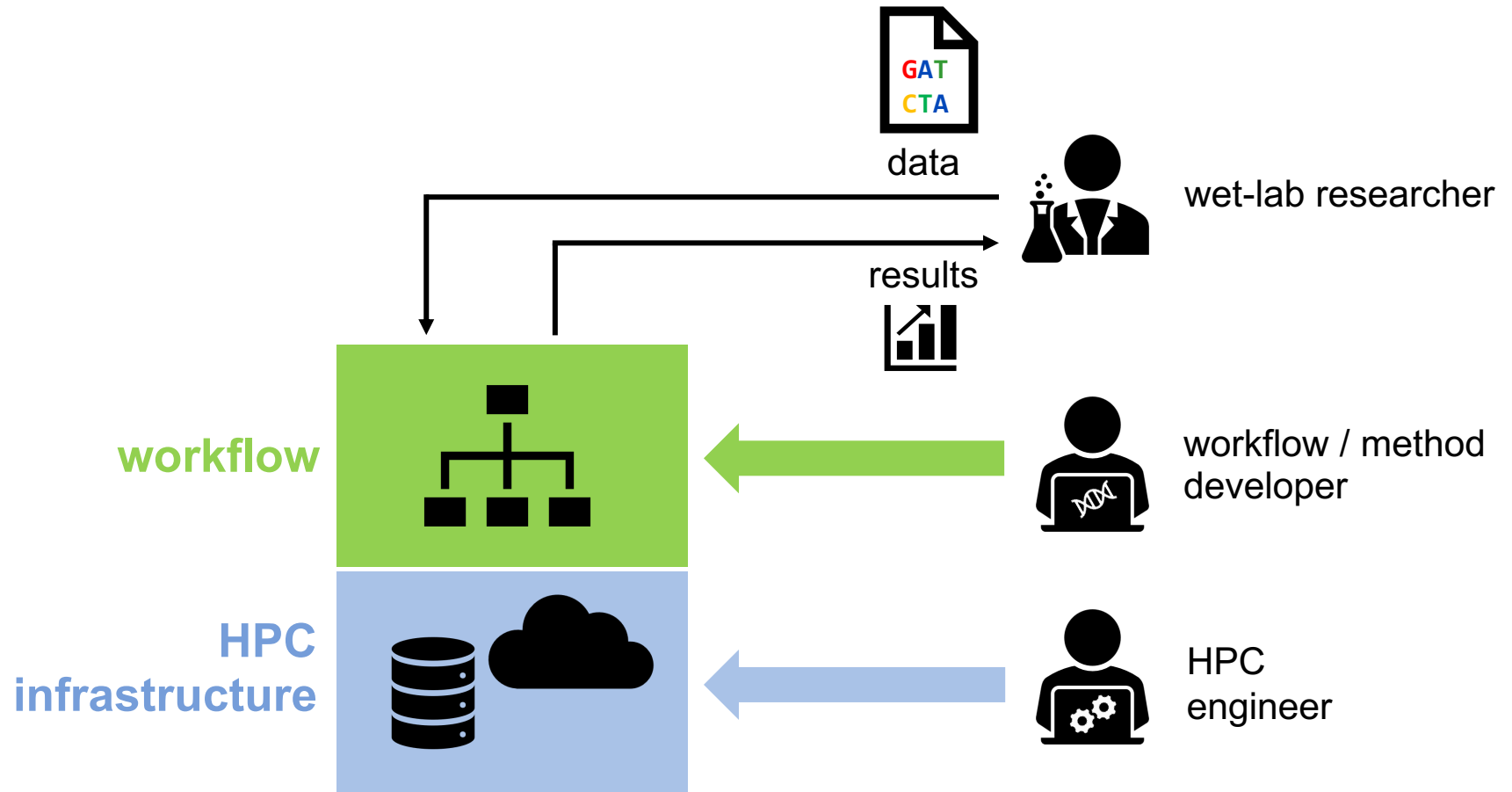
An open-source, cloud-ready web application for simplified  
deployment of CWL workflows

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Dr. Pavlo Lutsik

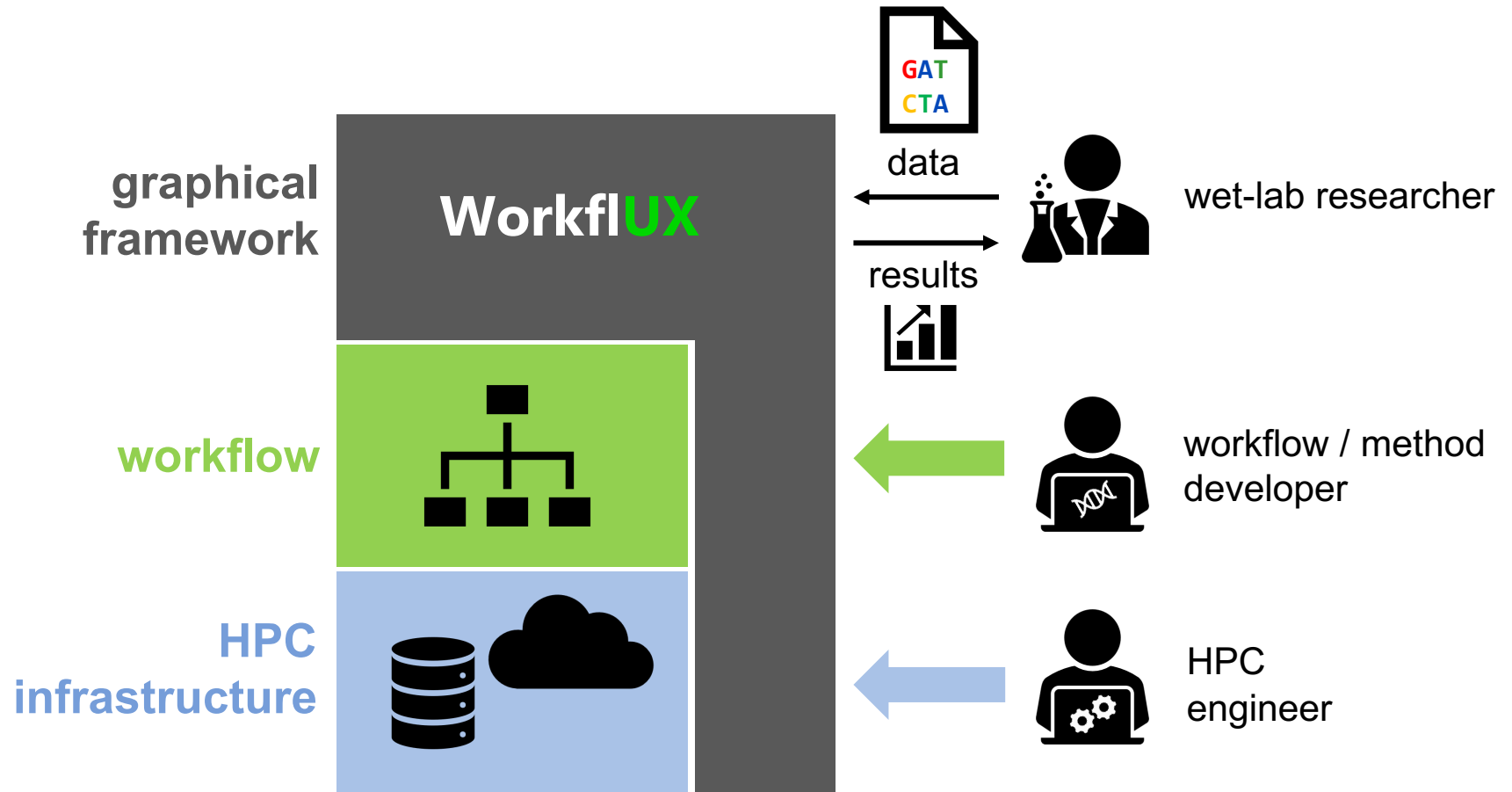
The Division of Cancer Epigenomics  
German Cancer Research Center

**Main developer: Kersten Breuer**



# Principle Roles in Workflow Development and Deployment




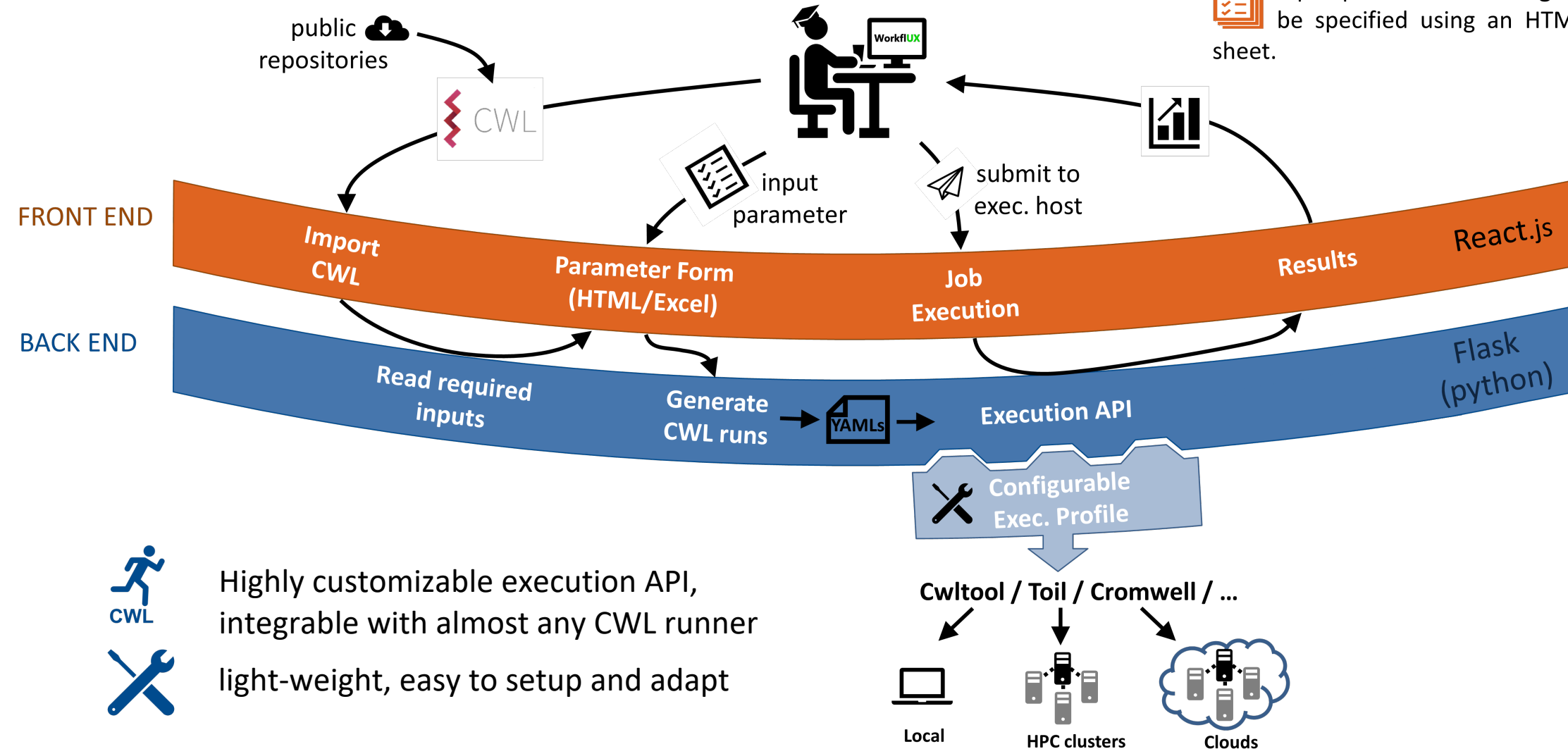
# Principle Roles in Workflow Development and Deployment



# WorkflUX – An Outline

 The **user-friendly web interface** requires no programming skills and allows **execution on remote infrastructures**. 

 Input parameters for **large sample batches** can be specified using an HTML form or a spreadsheet.



Highly customizable execution API,  
integrable with almost any CWL runner

light-weight, easy to setup and adapt



# WorkflUX – Technical Detail



single page web app



Flask

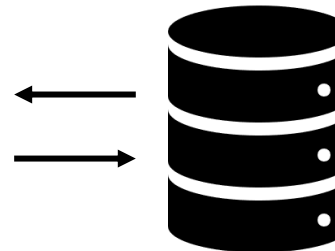
python-based,  
scalable with Gunicorn

Front End



Back End

SQLite  
MySQL  
etc.



Organization of:

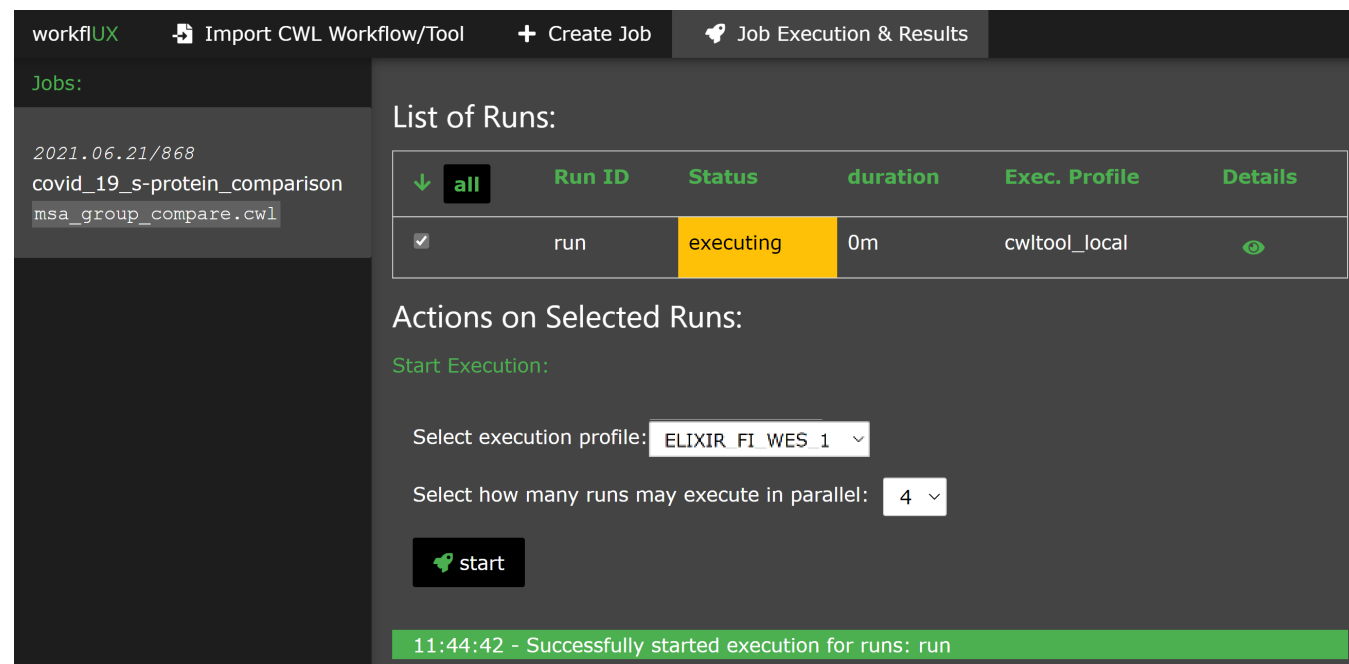
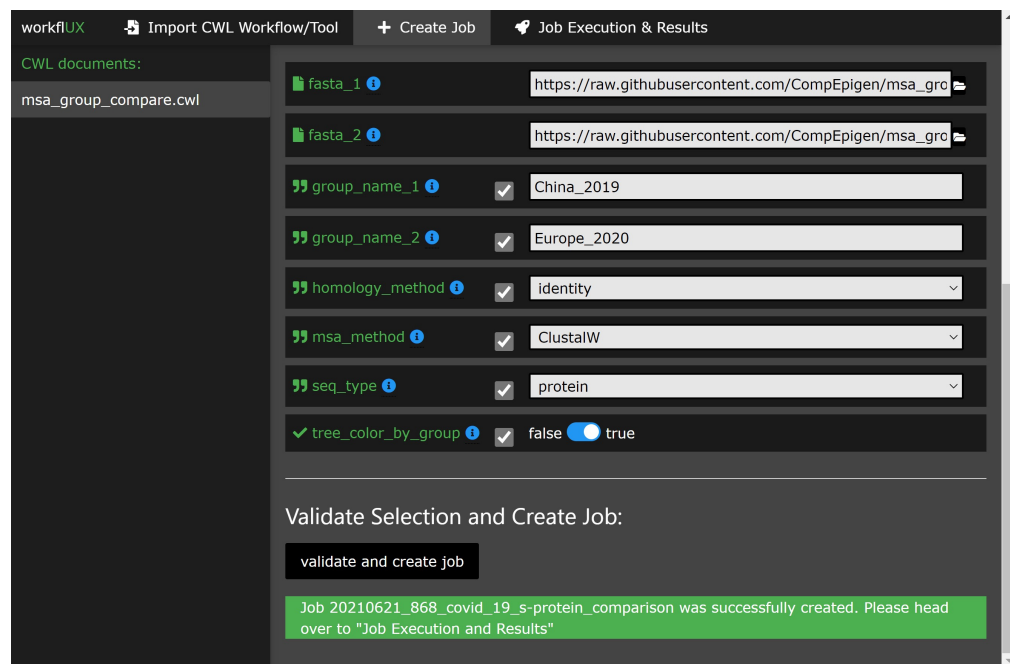
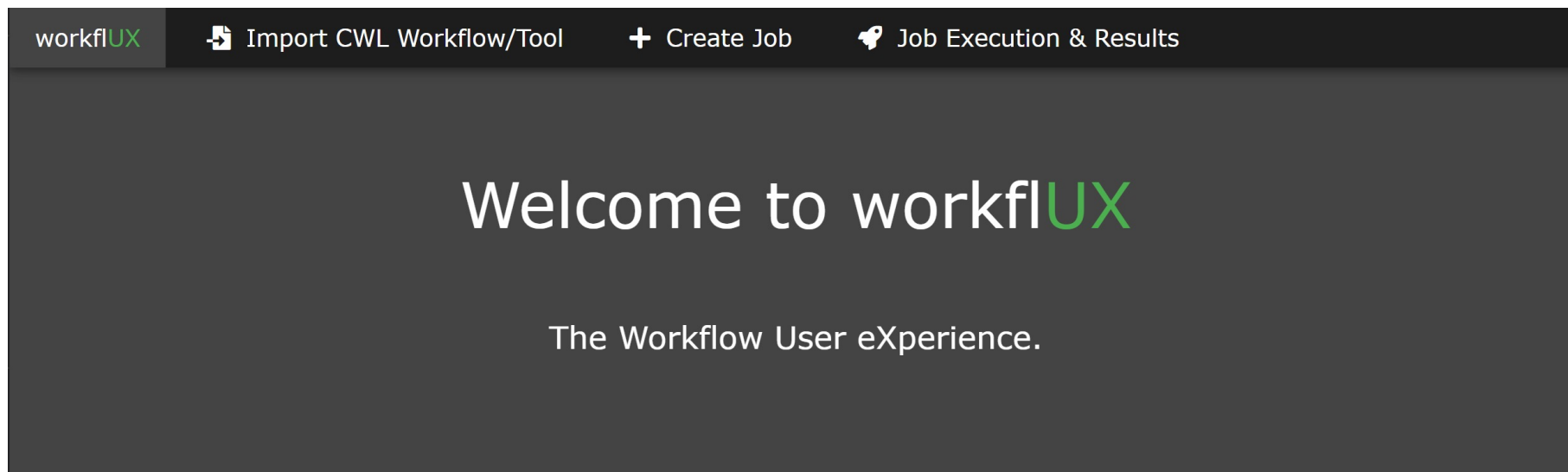
- users
- workflows
- jobs

Exec.  
Profile:

`python / bash / powershell`

1. prepare: infrastructure provisioning,  
file upload,  
setup execution environment
2. execute: workflow + input  execution engine
3. evaluate: evaluate success of job
4. finalize: cleanup,  
file download

## How does it look?



# Target Audience and Usage Scenarios

currently

## Interdisciplinary Research Groups:

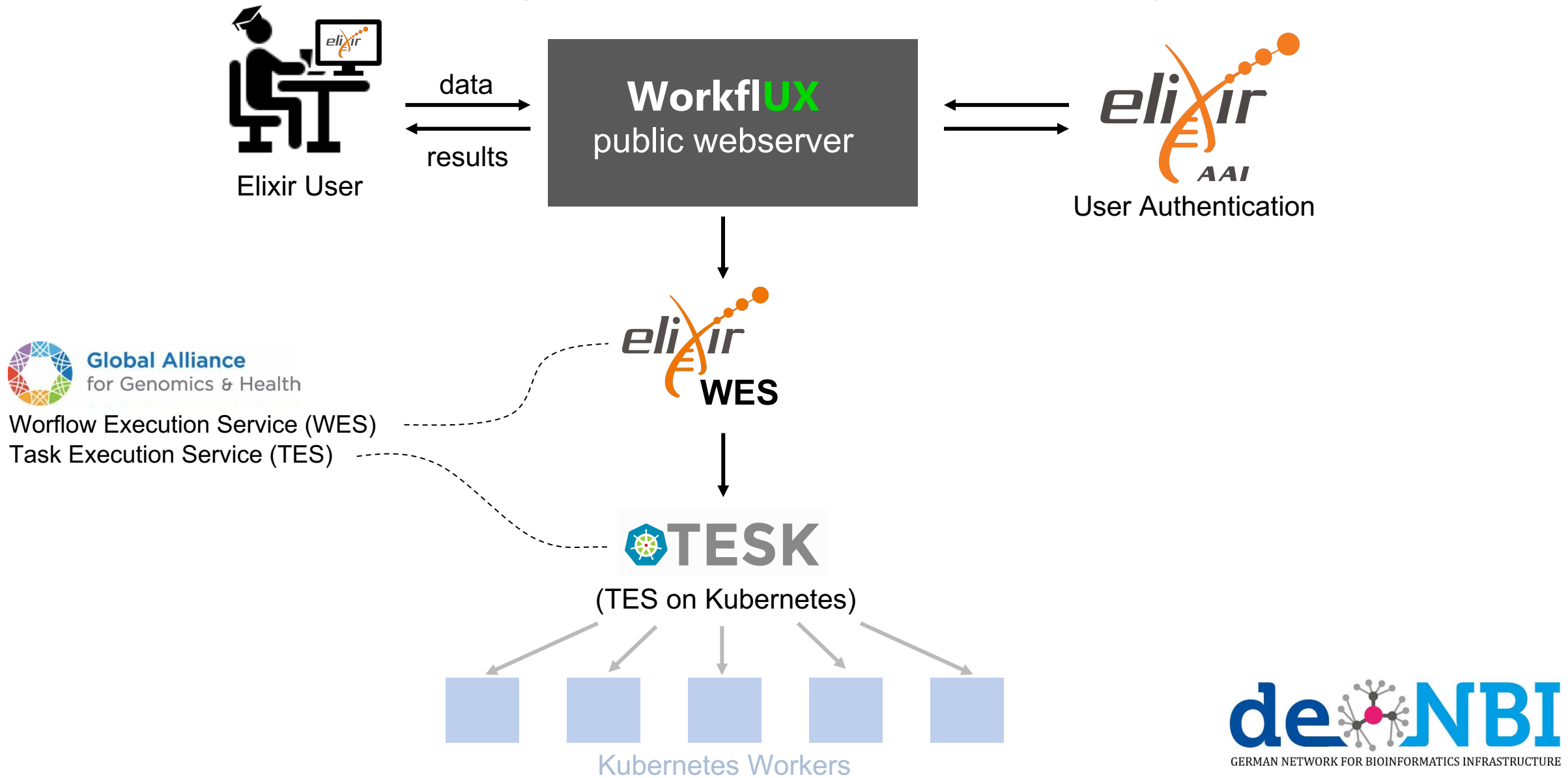
- used locally as desktop application (Linux, Windows, MacOs)
- HPC in protected networks:
  - Servers
  - Clusters
  - Clouds
- minimal setup required
- integration of GA4GH WES standard

in development

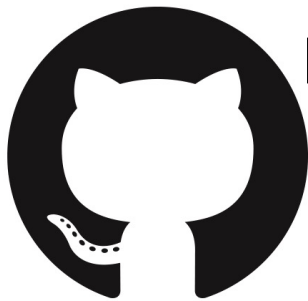
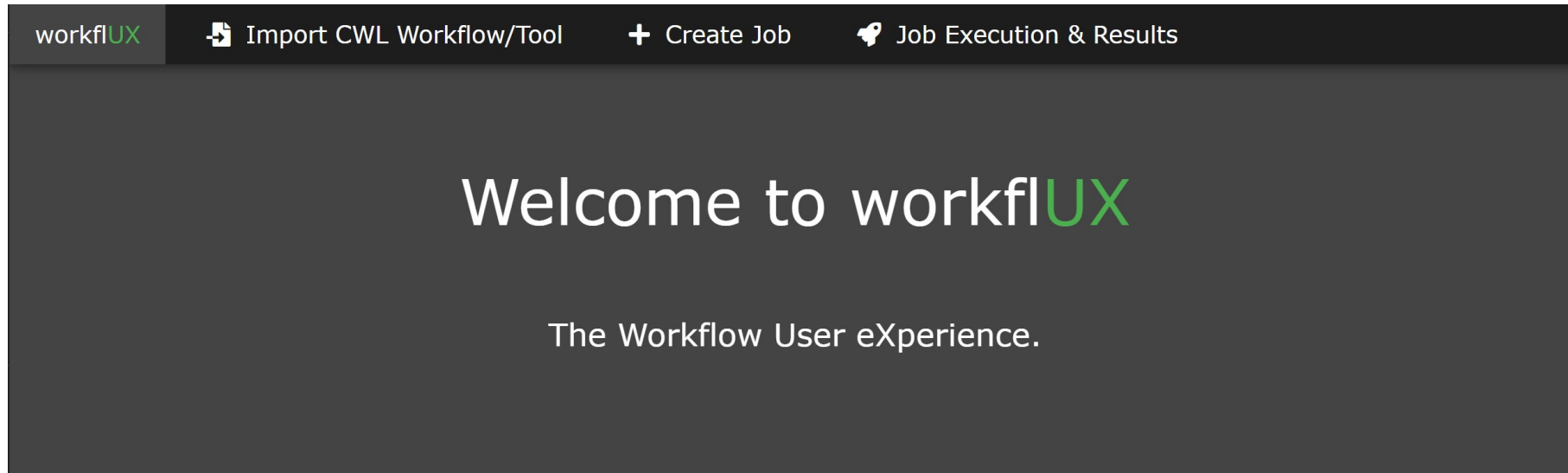
## Organizational Scale:

- multi-user, multi-project management
- execution on publicly available infrastructure
- collaborative work on protected data

# Participating in the Elixir Cloud and AAI Project



# Please try it out



<https://github.com/CompEpigen/WorkflUX>

Open source - Apache 2.0 License

Easy to install: `python3 -m pip install workflux`

Feedback and contribution is welcome.

# Thanks to our Contributors



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The entire Elixir Cloud and AAI Team for their current and future work.

