

# Towards sustainable training in essential computing research skills in the Netherlands

Kuzak M<sup>1</sup>, van Gelder C<sup>1</sup>, Martinez Ortiz C<sup>2</sup>, Kurapati S<sup>3</sup>, Schürch A<sup>4</sup>,  
Teperek M<sup>3</sup> and Turkyilmaz-van der Velden Y<sup>3</sup>

<sup>1</sup>Dutch Techcentre for Life Sciences, ELIXIR-NL <sup>2</sup>Netherlands eScience Center

<sup>3</sup>Delft University of Technology, <sup>4</sup>University Medical Center, Utrecht

E-mail: mateusz.kuzak@dtls.nl,

## 1. Introduction

Life science research increasingly depends on computational skills that enable efficient work with large complex datasets. Unfortunately, formal curricula often lack training in this area. There is a need for specialised training that includes topics like shell scripting, basic programming skills in R or Python, data handling, reproducible computational research and open science.

## 2. Results

DTL/ELIXIR-NL (Dutch Techcentre for Life Sciences), The Netherlands eScience Center (NLeSC), 4TU Centre for Research Data and TU Delft, work together towards developing the training capacity that fills this skills gap. The initiative started in 2015 with the ELIXIR Software and Data Carpentry (SWC/DC) pilot project. Shortly after that, the Netherlands eScience Center became a SWC/DC member organisation and since then the first SWC/DC instructors in the Netherlands have been certified. In January 2016 the first workshop *Essential Skills in Data-Intensive Research* based on Software and Data Carpentry Curricula took place in Utrecht.

Since 2016 the initiative has been actively delivering training, building the instructor community and strengthening the collaboration with Software Carpentry and Data Carpentry Foundations (and with the Carpentries foundation after 2017).

The undertaken training activities are based on the Carpentries training model and the close collaboration with Foundation(s) is essential. In September 2016 Jonah Duckles, at that time an executive director of SWC, visited the Netherlands and discussed with several Dutch stakeholders how the Foundation can work together with the Dutch research community. Shortly after the Netherlands eScience Center extended the SWC/DC affiliation, with a focus on instructor capacity building. Moreover ELIXIR-Europe, following the successful SWC/DC ELIXIR pilot, established an agreement with the Carpentries which allowed for up to forty workshops and three editions of the instructor training delivered in the period of two years. The aim of this partnership is to give the Carpentries a kick-start in the twenty-one ELIXIR nodes. tart in the twenty-one ELIXIR nodes.

Recently the 4TU Centre for Research Data, in the ini-

tiative led by TU Delft Library, has been active in building the capacity to teach Software Carpentry and Data Carpentry workshops. The organisation has run its first workshop in December 2018, have trained one instructor since then and will hold the second workshop at the end of March. With the plan to run regular workshops across four technical universities (Eindhoven, Delft, Twente and Wageningen) 4TU have signed a membership arrangement with the Carpentries. It will train six Data Stewards to teach at future workshops.

The key to making this initiative sustainable is establishing a local community of active instructors. Currently, there are 20 certified instructors in the Netherlands. There are also two certified Instructor Trainers.

## 3. Discussion

We continue to build a sustainable training program and trainers base spanning the Netherlands. Multiple workshops have been taught in the past year and more are planned in the near future. The initiative focused on strengthening the collaboration with SWC/DC Foundations and building the community of active instructors and other contributors.

## References

1. <http://software-carpentry.org/>
2. <http://www.datacarpentry.org/>
3. <https://www.surf.nl/en/agenda/2016/04/surf-research-boot-camp/index.html>
4. <http://nationalphdday.nl/>