Bioinformatics training: a global survey of training needs

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Abstract
The need for bioinformatics training is fast outstripping the pace of global training provision. The problem isn’t just affecting students – many postdoctoral researchers, research associates and even PIs/Group Leaders are discovering that they lack the skills necessary to analyse and interpret their data effectively. The situation has been exacerbated by the closure of bioinformatics degree programmes, leaving the educational gaps to be filled with a host of short, ad hoc, geographically dispersed training courses.

In 2013, the Society for Experimental Biology (SEB), in association with members of GOBLET (Global Organisation for Bioinformatics Learning, Education & Training – www.mygoblet.org), surveyed bioinformatics training needs amongst life scientists. The SEB survey was re-launched to assess the scale of the problem by casting the net wider, to gain a more global perspective on current bioinformatics training needs. The survey was distributed to more networks and societies worldwide. The results are presented here.

Survey Aims
To gain information about:
• How scientists have received bioinformatics training & education
• Their level of confidence with databases, software, command-line tools
• How scientists would like to receive education and training in the future
• What bioinformatics skills would particularly be of interest

Survey Metrics
• Worldwide distribution to known bioinformatics & life science mailing lists
• 498 respondents
• Responses from: 22% Academic/PI; 24% Postdoc/research staff; 26% MSc/PhD students; 5% Technical staff; 23% Other

Bioinformatics skills required
• 54% Analysing & interpreting data/stats
• 13% Programming
• 8% Database selection and usage
• 17% Software tools (using correctly + adapting)
• 8% Sequencing analysis

Key outcomes
• While a small sample, useful information could still be learned from the responses
• When asked how confident respondents felt about their skills, confidence was much higher with data analysis, yet this was the most sought-after skill!
• Confidence was much lower with command-line software tools, yet programming was much less sought after. Is this a true reflection?
• Online & stand-alone workshops emerged as the preferred mechanism for receiving training. Many comments seem to reflect the desire for online learning/e-learning with tutor support, or alongside workshops. Interestingly, undergrad/graduate programmes scored quite low.

GOBLET follow-up with biologists at SEB2014. We asked:
• Do the survey trends resonate with you? If not, why not?
• Are there gaps in the results? If so, what are they?
• What could universities/other providers do to help?
  - e.g., CPD? If so, in what form (distance, blended, short workshops...?)

www.mygoblet.org

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