### Competencies Model for Bibliometrics

#### Knowledge in the Field

- **Entry**
  - Support different stakeholders with general enquiries about bibliometrics
  - Understand the strengths and weaknesses of indicators and sources
  - Help researchers identify suitable places to publish
  - Be aware of the key responsible metrics principles (e.g., DORA, Leiden Manifesto)
  - Keep updated with the latest issues in scholarly communication

- **Advanced**
  - Interpret a variety of data and explain how to use these for different purposes
  - Apply bibliometric knowledge to increase the visibility and impact of research
  - Be able to recommend indicators and prepare analyses for institutional purposes
  - Distinguish from all software available which are the most appropriate for each analysis
  - Help to curate bibliographic data when using different data platforms
  - Apply knowledge to advise in library collections and evaluate the coverage of repositories
  - Help with requests about how to use metrics in different scenarios

- **Expert**
  - Hold a deep understanding of the history and the evolution of bibliometrics as a discipline
  - Advise senior leadership teams on the preparation of research strategy
  - Act as key advisor in discussions about research assessment
  - Undertake research in the field of bibliometrics
  - Hold advanced knowledge in standardisation and normalisation tasks
  - Understand the potential use of data mining in bibliometrics, as well as AI tools

#### Responsibilities and Tasks

- **Entry**
  - Explain the use and considerations of common indicators
  - Help to deliver introductory training about bibliometrics
  - Understand the importance of author disambiguation tasks
  - Interpret a variety of data and explain how to use these for different purposes
  - Support staff in gathering bibliometric data
  - Keep updated in the field (e.g., attending conferences and networking)

- **Advanced**
  - Advise on the selection of indicators for specific research questions (e.g., potential collaborations)
  - Apply the responsible use of metrics to specific scenarios
  - Explain citation elements of each university league
  - Produce reports handling different types of sources and interpret confidently
  - Participate in key national debates about how research quality should be evaluated
  - Actively participate in publications and conferences in the bibliometrics field
  - Undertake research into users’ needs for analytical tools
  - Design, develop and deliver more advanced training
  - Understand the complexity and nature of different institutions
  - Provide support with standardisation of institutional profiles
  - Advise on definitions of impact and how to demonstrate it beyond academia

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#### Technical Skills

- **Entry**
  - Deal confidently with bibliometric data: download, store, analyse and graphical presentations
  - Prepare reports and presentations that include some interpretations and visualisations of the bibliometric data

- **Advanced**
  - Download, clean and manipulate bibliographic data to ensure accuracy
  - Prepare advanced visualisations with tools such as CiteSpace, VOSviewer, CitNetExplorer, Pajek
  - Use statistical packages, such as SPSS, STATA, and XLSTAV to prepare analyses
  - Be familiar with their institutional repository and how these interact with databases

- **Expert**
  - Work with APIs and big datasets
  - Undertake programming for downloading and manipulating data
  - Be able to deploy a variety of software tools for advanced statistical analyses
  - Use specialised software to undertake network analysis for bibliometrics
  - Know the basic software packages of different AI techniques in bibliometric analyses
  - Be able to compute and develop new bibliometric indicators

#### Professional Integrity

- **Entry**
  - Understand the key characteristics of scholarly communication and the research enterprise.
  - Provide neutral advice based on data results and scientific evidence rather than personal beliefs or preferences.
  - Monitor whether metrics are being used in a responsible way in their institutions.
  - Work effectively in collaboration across their institutions with other services such as Library, Research Office and other professional services.
  - Continuously update their professional skills.
  - Work independently, showing a high level of attention to detail.

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2021 Competencies Model for Bibliometrics (Visual Gradients)