

# EDAM – The data analysis and management ontology



Lucie Lamothe<sup>1</sup>, Mads Kierkegaard<sup>2</sup>, Melissa Black<sup>3</sup>, Hager Eldakrouy<sup>4</sup>, Ankita Priya<sup>5</sup>, Anne Machinda<sup>6</sup>, Uttam Singh Khanduja<sup>7</sup>, Drashti Patoliya<sup>8</sup>, Rashika Rathi<sup>9</sup>, Tawah Peggy Che Nico<sup>10</sup>, Gloria Umutesi<sup>11</sup>, Claudia Blankenburg<sup>12</sup>, Vedran Kasalica<sup>13</sup>, Anita Op<sup>14</sup>, Precious Chieke<sup>14</sup>, ZM202<sup>14</sup>, ellschi<sup>15</sup>, Gerlex89<sup>16</sup>, Victoire Baillet<sup>17</sup>, Séverine Duvaud<sup>18</sup>, Steffen Neumann<sup>12</sup>, Steve Laurie<sup>19</sup>, Veit Schwämmle<sup>2</sup>, Hamish Struthers<sup>20</sup>, Ivan Kuzmin<sup>21</sup>, Erik Jaaniso<sup>21</sup>, Bryan Brancotte<sup>17</sup>, Kessy Abarenkov<sup>21</sup>, Olga Silantyeva<sup>22</sup>, Jean Iaquina<sup>22</sup>, Chris Hunter<sup>23</sup>, Jon Ison<sup>1</sup>, Jonathan Karr<sup>24</sup>, Anne Fouilloux<sup>22</sup>, Alban Gaignard<sup>25</sup>, Hervé Ménager<sup>1,17</sup>, Matúš Kalaš<sup>26</sup>

<sup>1</sup> IFB-core, French Institute of Bioinformatics, CNRS, France (J.I. at the time of contribution); <sup>2</sup> University of Southern Denmark, Ødense, Denmark; <sup>3</sup> Outreachy intern (EDAM), São Paulo, Brazil (at the time); <sup>4</sup> Outreachy intern (EDAM), Cairo, Egypt (at the time); <sup>5</sup> Birla Institute of Technology, Mesra, India; <sup>6</sup> independent contributor, Bamenda, Cameroon; <sup>7</sup> Medicaps University, Indore, India; <sup>8</sup> independent contributor, Surat, India; <sup>9</sup> Indian Institute of Technology, Mandi, India; <sup>10</sup> University of Buea, Cameroon; <sup>11</sup> independent contributor, Kigali, Rwanda; <sup>12</sup> Leibniz Institute of Plant Biochemistry, Halle, Germany; <sup>13</sup> Utrecht University, Netherlands; <sup>14</sup> independent contributor, Nigeria; <sup>15</sup> independent contributor, Germany; <sup>16</sup> independent contributor; <sup>17</sup> Pasteur Institute and Paris Cité University, France; <sup>18</sup> Swiss Institute of Bioinformatics, Switzerland; <sup>19</sup> Centre Nacional d'Anàlisi Genòmica, Barcelona, Spain; <sup>20</sup> Linköping University, Sweden; <sup>21</sup> University of Tartu, Estonia; <sup>22</sup> University of Oslo, Norway; <sup>23</sup> GigaScience GigaDB, Hong Kong, China; <sup>24</sup> Icahn School of Medicine at Mount Sinai, New York City, USA; <sup>25</sup> Institut du thorax, University of Nantes/CNRS/INSERM, France; <sup>26</sup> University of Bergen, Norway

EDAM is an ontology of **data analysis** and **data management**, within and beyond life sciences. It comprises concepts related to data analysis, modelling, optimisation, and data life cycle.

Thanks to EDAM and its applications, digital **research objects** – such as data, tools, workflows, standards, or learning materials – can be made easier to **find, understand, reuse, and combine**.

EDAM is developed in a **participatory** and **transparent** fashion, within a broad and growing, global **community of contributors**.

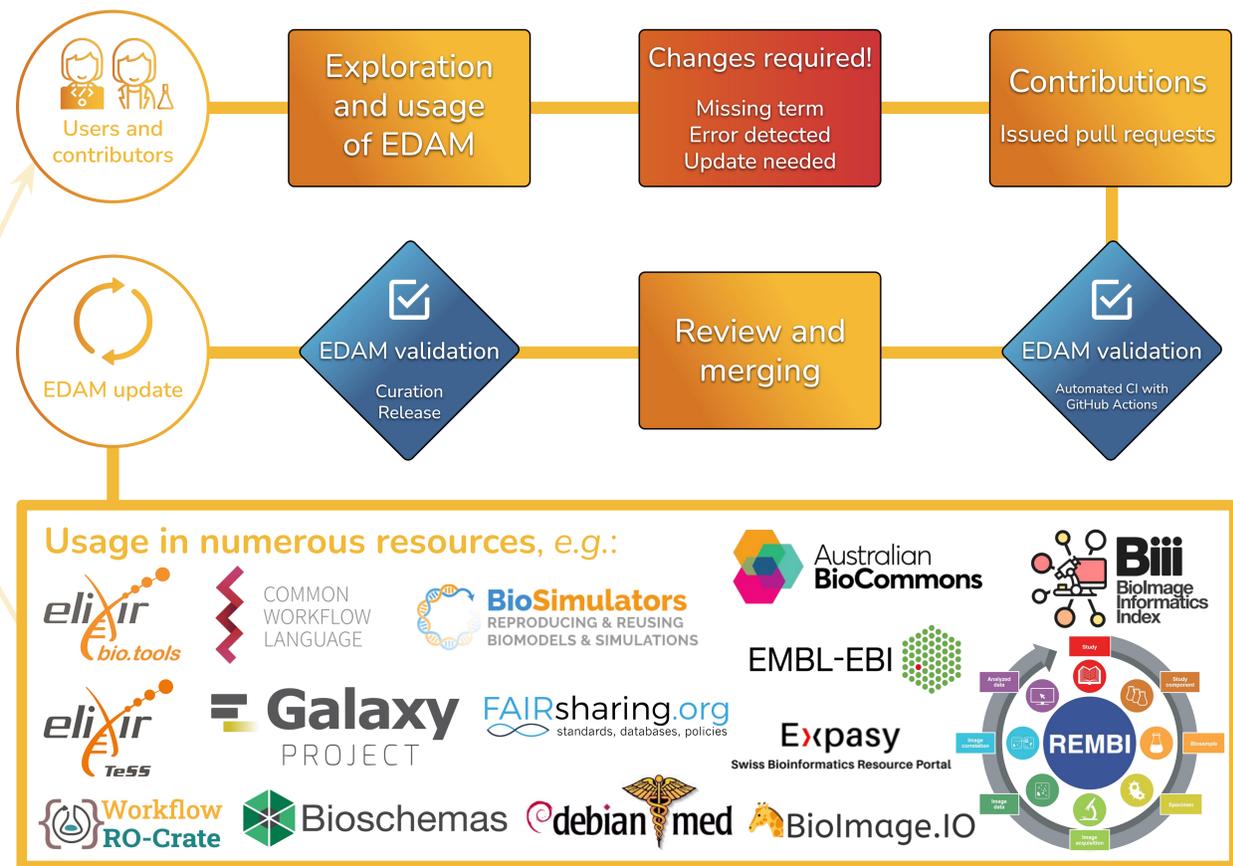
Community extensions of EDAM are:

 **EDAM Bioimaging**  
(including machine learning)

 **EDAM Geo** – a work in progress on EDAM for interdisciplinary application domains, such as **public, global, and planetary health, environmental sciences**, and various science-based applications.

*New contributors are welcome!* 😊

The community-driven development comes with a set of **challenges**:

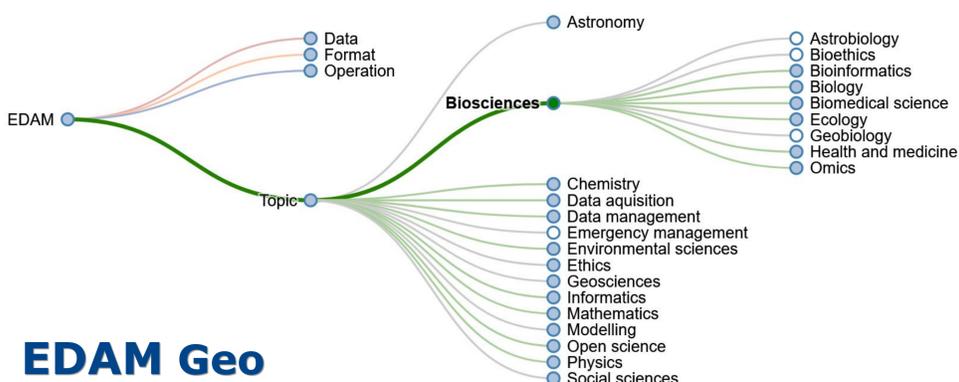


Design by Alban Sauvalle, IFB-core, ELIXIR France. Using icons from FlatIcon.com

To help researchers use and contribute to EDAM, a set of tools is provided, including:

## EDAM Browser

A lightweight, end-user-oriented web app for **exploring EDAM** and its usage graphically. It also allows contributors to **submit a suggestion** to improve EDAM, using a web form.



**EDAM Geo**

## EDAM validation

The quality-control tooling includes standard tools – **ELK, HerMiT, and ROBOT** – plus a custom validator working on both the syntactic and the semantic level. The validation tools are run by **continuous integration (CI)** workflows, using GitHub Actions. Additional tests are available for **curation**.

