This presentation was given at BIOLAWEB BgF Summer School - Workshops in Project Management (9-11 October 2023), third day (11 October 2023)

Open Science

Matija Zlatar

matija.zlatar@ihtm.bg.ac.rs

BgF summer school

11/10/2023

Open science is a movement that aims to promote and achieve free access to scientific knowledge, data and results of scientific research

OPEN - anyone can freely access, use, modify, and share for any purpose (results, research data, lab notes, research processes)

Research more open, global, collaborative, creative, and closer to society

"Research simply done properly"

The principles of openness aim to make science more transparent, visible, efficient, fair

The principles of open science are applied to the entire process of producing scientific results, from securing funds and meeting the requirements of financiers to depositing scientific works, applying research results in practice and monitoring the effects of scientific work.

Why open science?

Better visibility of your work

Availability to researchers from developing countries

Taxpayers get some value for money

In accordance with the rules of project financing

Public availability of research results

Research can affect policy creation

Open Access is the DEFAULT for research results in H2020

Higher citation

Experts can apply the results of your research

Why open science?

Good researcher

- Strive for excellence and take responsibility
- Respect the law, research ethics, and professional standards
- Support a culture of transparency, openness, and honesty towards other researchers and the public
- Maximize public benefit and avoid resource waste
- Continue learning and mentor others

- Trust in science
- Public resources
- Feedback
- Internationalization
- Speed of discovery

Increase transparency, for greater efficiency, exactness, accountability, sustainability for future generations, and reproducibility

Increased transparency can reduce fraud, data manipulation, and selective reporting of results

Open science

- Open data
- Open material
- Open access
- Open source (software)
- Open peer-review
- Open educational resources
- Open innovations
- Open infrastructure

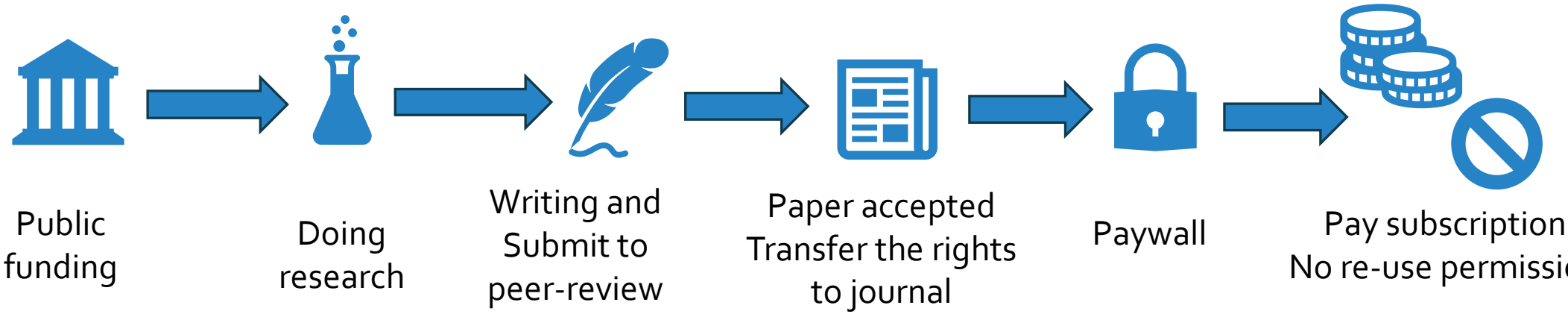
Open science principles

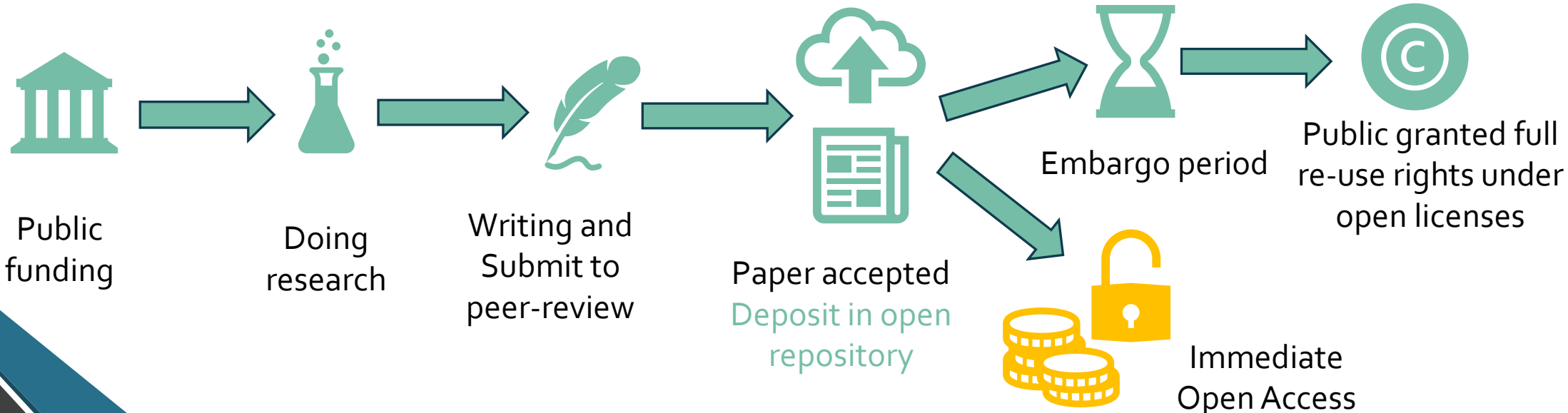
- Transparency
- Re-use
- Cooperation
- Accountability
- Reproducibility
- Quality and reliability

Why not open science?

- Intellectual property?
- Someone else getting detailed results of your work for free?
- Time
- Money?
- ?

Scholarly publishing system





Open access to publications

Gold

- Made available in Open Access mode by the publisher immediately upon publication
- Pay APC

Green

- Self-archiving (final peer-reviewed manuscript, accepted for publication)
- Embargo period

Hybrid

- Free under an open license in a toll-access journal

Bronze

- Available on publisher website but without any explicit license

Platinum

- Does not charge a subscription or a fee from the author

Open access to publications

Self-archiving

+ Any Journal
  No fees

− Embargo period

OA Journal

+ Direct OA
  Retain copyright

− APC

How to?

Publish in any journal of your choice (check funder requirements, consortium agreements, co-authors…)

If subscription based - deposit in a repository and provide access (embargo period will be set up)

OA Journal - deposit in a repository and provide access

The article must always be deposited in a repository, even if the gold route has been chosen

ALWAYS deposit a version in a repository

Add metadata: funder, grant ID number, acronym, publication date, …

Where?

Institutional repository

Disciplinary (arXiv, Europe PubMed Central…)

Zenodo: EC-cofounded, multidisciplinary, free repository repository

Directories of Open Access Repositories: http://v2.sherpa.ac.uk/opendoar/ ; roar.eprints.org; explore openaire.eu

Check publishers policies: https://www.sherpa.ac.uk/romeo/

A social networking site is not an open access repository!

Where? CeR - Central Repository ICTM

CER - Central Repository

Institute of Chemistry, Technology and Metallurgy

CER

CER

CeR i.e. Central Repository ICTM is a digital repository of the Institute of Chemistry, Technology and Metallurgy, University of Belgrade, Serbia. CeR provides open access to the publications, as well as to other outputs of the research projects implemented in this institution.

The software platform meets the current requirements that apply to the dissemination of scholarly publications and it is compatible with relevant international infrastructures.

You may use the external application *Authors, Projects, Publications (APP)* to browse and search authors and funding information. APP also enables metadata export and displays Altmetric scores and Dimensions, Scopus and Web of Science citation counts.

User Manual.

Institutions/Communities

Select an institution/community

IHTM

CeR - Central Repository ICTM – some examples

Posteri / Posters (bg.ac.rs)

Coordination preferences of NNO and NNS Schiff base ligands with Co(III) complexes (bg.ac.rs)

Prezentacije / Presentations (bg.ac.rs)

Modeling metal-ligand bonds – from ground to excited states (bg.ac.rs)

Radovi istraživača pre dolaska u IHTM / Researchers' papers before joining ICTM (bg.ac.rs)

Tehnička rešenja / Technical solutions (bg.ac.rs)

Istraživački podaci / Research data (bg.ac.rs)

CCDC 2220150: Experimental Crystal Structure Determination. Crystallographic data for: "Copper(II) and silver(I) complexes with dimethyl 6-(pyrazine-2-yl)pyridine-3,4-dicarboxylate (py-2pz): the influence of the metal ion on the antimicrobial potential of the complex" (bg.ac.rs)

Supporting data for: "Deoxyribonuclease I Inhibitory Properties, Molecular Docking and Molecular Dynamics Simulations of 1-(Pyrrolidin-2-yl)propan-2-one Derivatives". Animation of molecular dynamics simulations II. (bg.ac.rs)

What Is the Nature of Interactions of BF_4^-, NO_3^-, and ClO_4^- to Cu(II) Complexes with Girard's T Hydrazine? When Can Binuclear Complexes Be Formed? (bg.ac.rs)

CeR - Central Repository ICTM

Sub-communities within this community

Projekti Fonda za nauku Republike Srbije / Projects of the Science Fund of the Republic of Serbia
Rezultati u okviru projekata finansiranih od strane Fonda za nauku Republike Srbije / Results of the projects funded by the Science Fund of the Republic of Serbia

Collections in this community

Doktorati (Nardus) / Doctoral thesis

Istraživački podaci / Research data

Posteri / Posters

Prezentacije / Presentations

Radovi istraživača pre dolaska u IHTM / Researchers' papers before joining ICTM

Radovi istraživača / Researchers' publications

Tehnička rešenja / Technical solutions

CeR - Central Repository ICTM

Science Fund
of the Republic of Serbia

Rezultati u okviru projekata finansiranih od strane Fonda za nauku Republike Srbije / Results of the projects funded by the Science Fund of the Republic of Serbia

Collections in this community

AdCatFC
Advanced Catalysts for Low Temperature Fuel Cells: From Model System to Sustainable Catalysts

Gramulsen
Graphene-Based Wearable Multiparameter Sensor

MEMSAERO
MEMS Multisensor Instrument for Aerodynamic Pressure Measurements

NES
Physicochemical aspects of rhythmicity in neuroendocrine systems: Dynamic and kinetic investigations of underlying reaction networks and their main compounds

TMMagCat
Tailoring Molecular Magnets and Catalysts Based on Transition Metal Complexes

CeR - Central Repository ICTM

TMMagCat

BROWSE BY

Authors | Titles | Subjects

Search within this collection:

Go

Project supported by the Science Fund of the Republic of Serbia through the program IDEAS (#7750288). Principal investigator is Dr. Matija Zlatar

Recent Submissions

Synthesis and characterization of Fe(III) complex with the condensation product of thiosemicarbazide and 2-acetylthiazole / Синтеза и карактеризација комплекса Fe(III) са кондензационим производом 2-ацетилтиазола и тиосемикарбазида

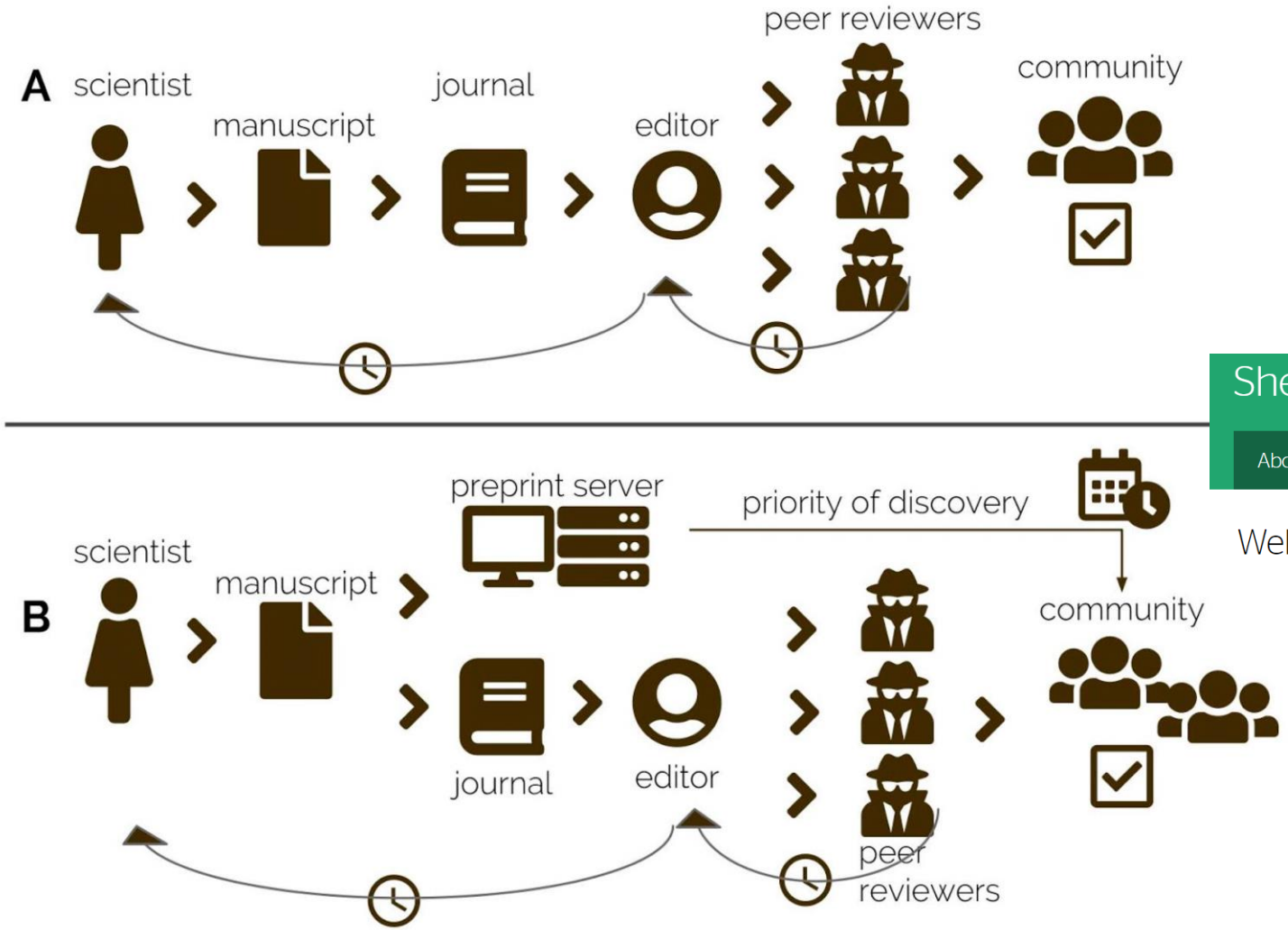
Savić, Milica; Pevec, Andrej; Radanović, Dušanka; Zlatar, Matija; Jevtović, Mima (Belgrade, Serbia : Serbian Cristallographic Soceity // Beograd, Srbija : Srpsko kristalografsko društvo, 2023)

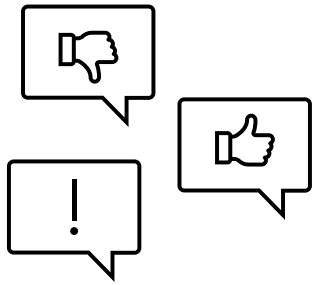
Correlating Structure and KA2 Catalytic Activity of Zn(II) Hydrazone Complexes

Adejumo, Temiloluwa T.; Danopoulou, Marianna; Zorba, Leandros P.; Pevec, Andrej; Zlatar, Matija; Radanović, Dušanka; Savić, Milica; Gruden, Maja; Anđelković, Katarina; Turel, Iztok; Čobeljić, Božidar; Vougioukalakis, Georgios C. (Wiley, 2023)

Pree-prints

Manuscripts shared online before the completion of journal-organized peer review





Sherpa Romeo

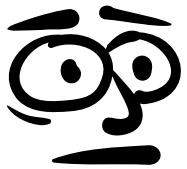
About | Search | TJ List | Statistics | Help

Welcome to Sherpa Romeo

Publications | Free Full-Text | Ten Hot Topics around Scholarly Publishing (mdpi.com)

Licences

	PUBLIC DOMAIN	PUBLIC DOMAIN	BY	BY SA	BY NC	BY ND	BY NC SA	BY NC ND
PUBLIC DOMAIN	✓	✓	✓	✓	✓	✗	✓	✗
PUBLIC DOMAIN	✓	✓	✓	✓	✓	✗	✓	✗
BY	✓	✓	✓	✓	✓	✗	✓	✗
BY SA	✓	✓	✓	✓	✗	✗	✗	✗
BY NC	✓	✓	✓	✗	✓	✗	✓	✗
BY ND	✗	✗	✗	✗	✗	✗	✗	✗
BY NC SA	✓	✓	✓	✗	✓	✗	✓	✗
BY NC ND	✗	✗	✗	✗	✗	✗	✗	✗



Wiki/cc license compatibility - Creative Commons

Choose a License (creativecommons.org)

About CC Licenses - Creative CommonsCreative Commons

Licences

CC-BY

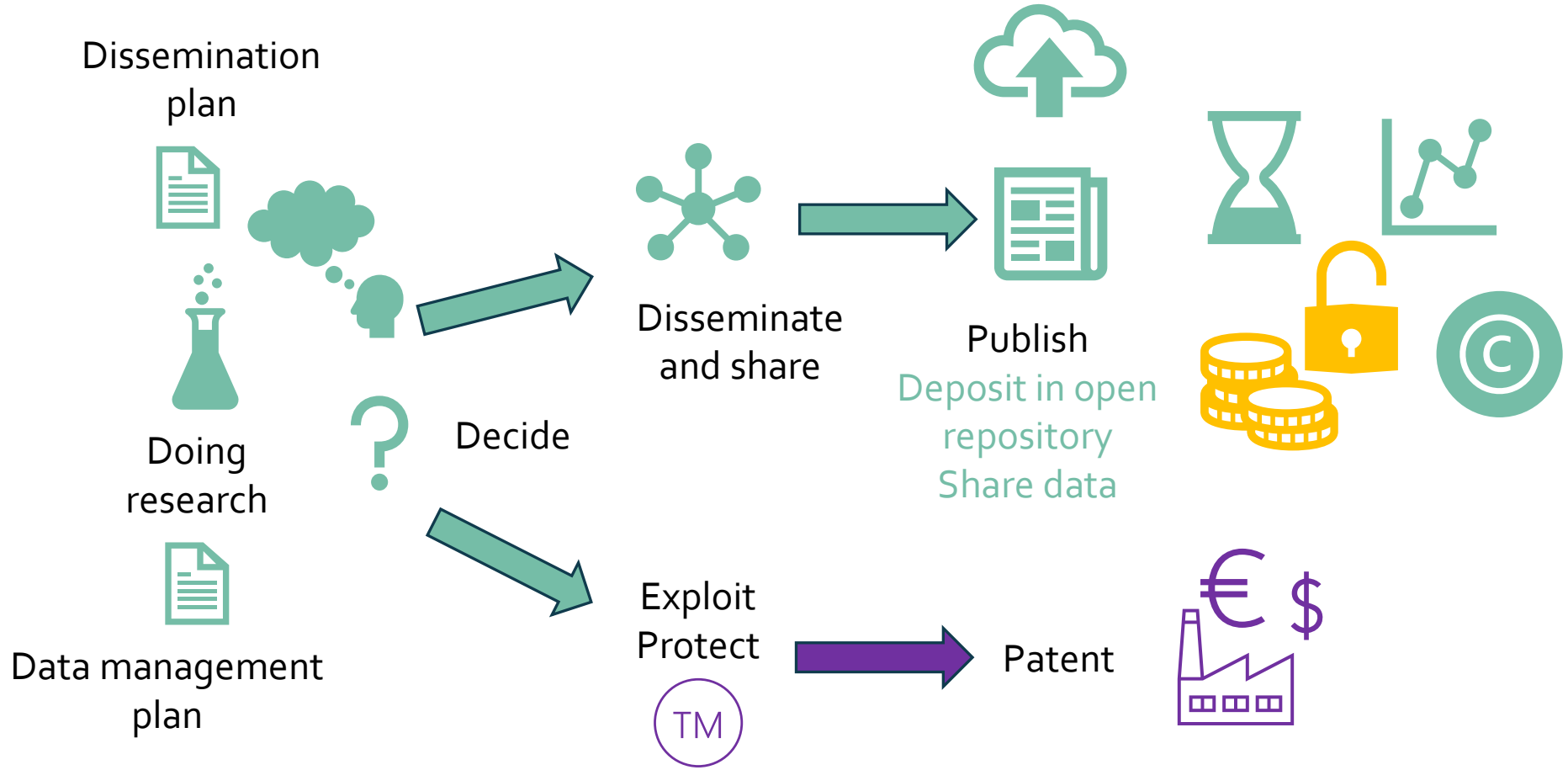
- (attribution only) - a good option for scientific works like articles, books, working papers, and reports
- Lets others distribute, remix, tweak, and build upon the work, even commercially, as long as they credit the author for the original creation
- Recommended for maximum dissemination and use of licensed materials

CCO

- Recommended for datasets and databases
- Built for jurisdictions where a full public domain dedication is not possible (e.g. in many continental Europe countries)
- Creative Commons CCo Public Domain Dedication waives copyright interest in a work you've created and dedicates it to the world-wide public domain
- Used to opt out of copyright entirely and ensure the work has the widest reach

Open data?

Make the data as open as possible and as closed as necessary



FAIR DATA

Findable

- Easy to find the data and the metadata for both humans and computers. Enabled by machine-readable persistent identifiers (PIDs) and metadata

Accessible

- Data can be retrieved using open protocols, possibly including authentication and authorization

Interoperable

- Can be combined and used with other data or tools

Re-usable

- well-described so that they can be replicated and/or combined in different settings

Open data and FAIR data not the same

Open file formats

- Text: TXT, ODT, PDF/A, XML
- Tabular data: CSV, TSV
- Image: TIFF, PNG, JPG 2000, SVG, WebP
- Audio: WAV, FLAC, OPUS
- Video: MPEG2, Theora, VP8, VP9, AV1, Motion JPG 2000 (MJ2)
- Binary hierarchical data: HDF5

Within the context of Open Science, files should not be compressed or encrypted and should avoid proprietary or patent-encumbered formats in favor of open formats. This ensures the access and reusability of the content.

Data management plan

- How the data will be created?
- What is the purpose of the data generation or re-use?
- What types and formats? Size?
- How it will be documented? Metadata? Keywords?
- Who will be able to access it?
- Where it will be stored? Repository?
- Who will back it up?
- Whether (and how) it will be shared and preserved?
- Security and ethics?

DMPonline (dcc.ac.uk) DMPTool Data Stewardship Wizard (ds-wizard.org)

https://zenodo.org/doi/10.5281/zenodo.4496934

Where to deposit data?

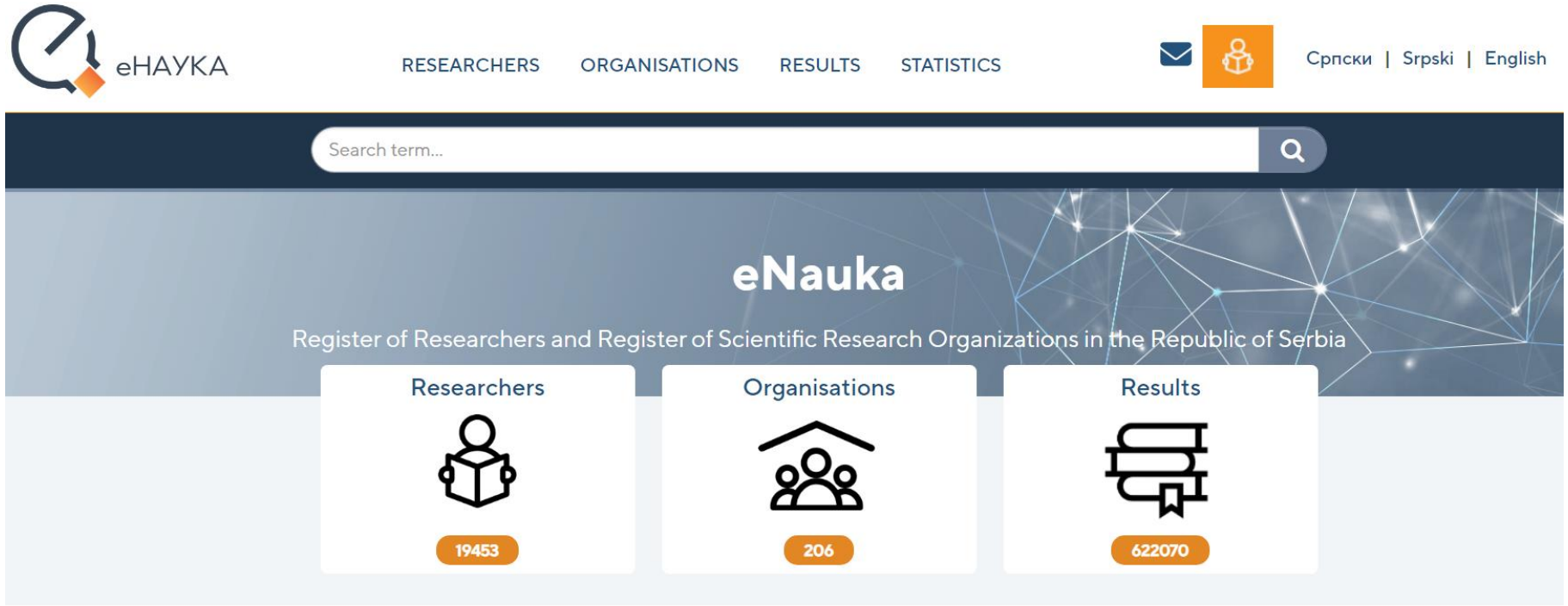
1. Use an external data archive or repository established for your research domain to preserve the data. Some recommendations are given by Nature
2. If available, use an institutional repository, or your research group's established data management facilities
3. Use a cost-free data repository such as Dataverse, Dryad, figshare or Zenodo.
4. Search for other data repositories in re3data. Filter options that will help you find FAIR-compatible repositories: access categories, data usage licenses, trustworthy data repositories and data a persistent identifier (PID). Consider whether the repository supports versioning

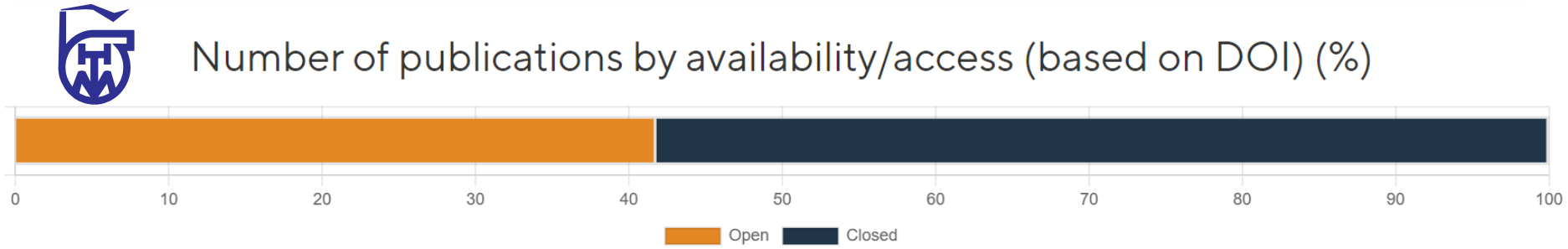
DATA ACCESSIBILITY

A data set collection of computational results is available at the iochem-bd platform, which can be accessed at www.dx.doi.org/10.19061/iochem-bd-4-10.

Example: ioChem-Find: Oxoiron (iochem-bd.org)

eNauka





Data automatically taken from institutional repositories (approx. 100)

BIOLAWEB

Thank you for your attention!

CER - Central Repository

Institute of Chemistry, Technology and Metallurgy

Science Fund of the Republic of Serbia

OSCS Open Science Community Serbia Zajednica otvorene nauke Srbije

TM MagCat

Република Србија
МИНИСТАРСТВО НАУКЕ,
ТЕХНОЛОШКОГ РАЗВОЈА И ИНОВАЦИЈА