



Research in context graph

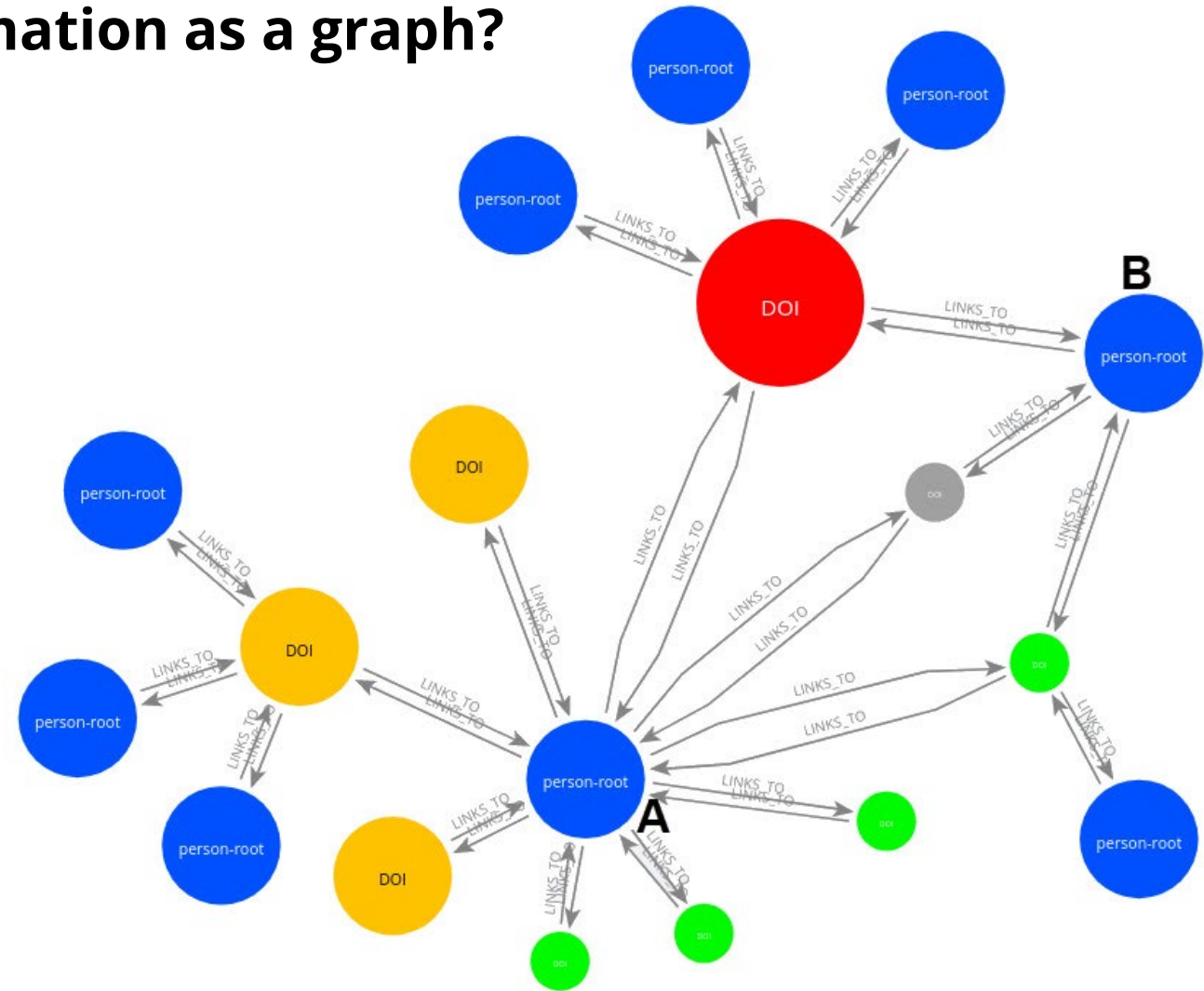
Presentation PID graph workshop at SURF, May 10, 2023

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What if... we look at research information as a graph?

- We have relations between objects
- We can “walk” from one object to another
- Related objects are neighbors
- No duplicates

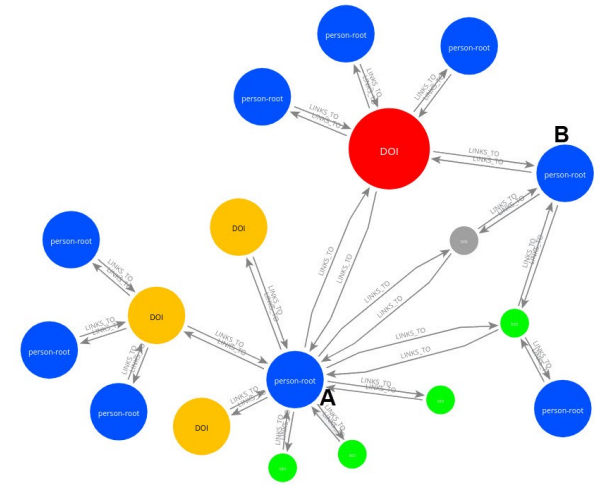
Object = person, organization, article, book, dataset, software, ...



What if...
we are able to harvest any source we'd like?

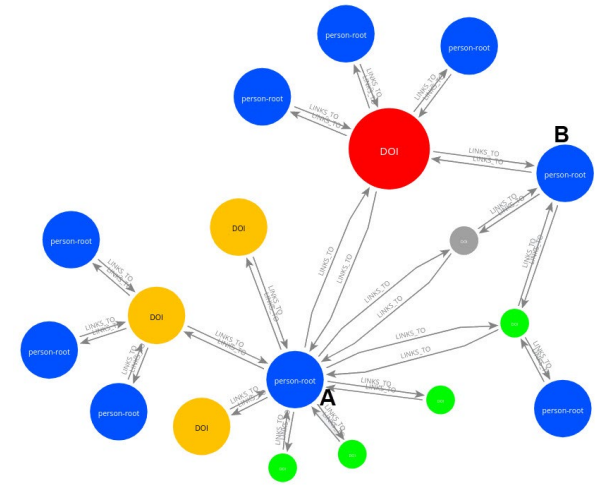
We can collect information that is:

- of specific interest (and not more)
- only visible in our own organization
- not harvested by other sources



Sources = Pure, Yoda, Research Software Directory, OpenAlex, UU staff pages,
Zenodo, GitHub, NWO grant application system, Scopus, OpenAIRE, ...

What is Ricgraph?



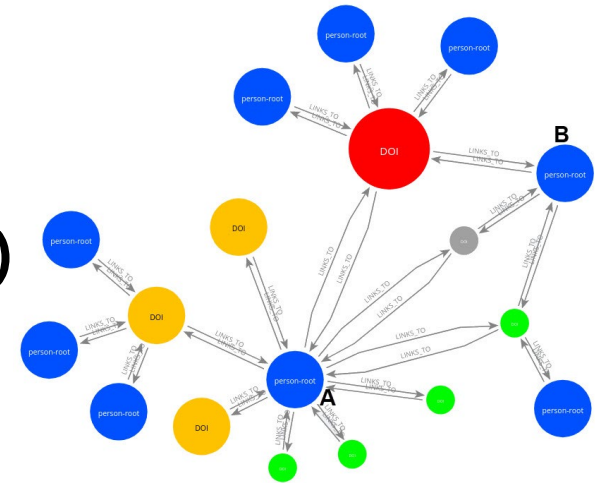
- A **graph** that can represent any object (node) that has a relation (edge) to another object
- It can **harvest** information from several sources
- Stores **metadata**, not objects
- **Research in context**: people, organizations, research outputs, skills, [grants, projects] in relation to each other
- A graph is **fast**
[time to access a neighbor not dependent on number of nodes in graph]

Research output = article, book, dataset, software, ...

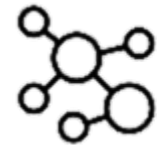
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Ricgraph sources (example for Utrecht University)

can contain information
about any organization



information only
accessible at UU



Ricgraph

information
open to public

Pure UU

OpenAlex UU

OpenAlex UMCU

Research Software
Directory UU

Yoda

UU staff pages

contains only UU information

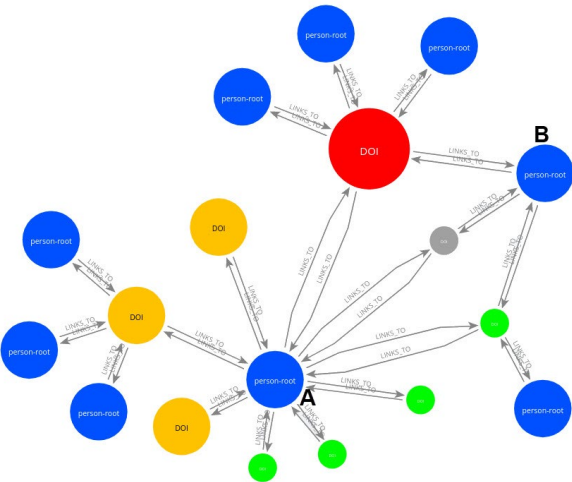


Utrecht
University



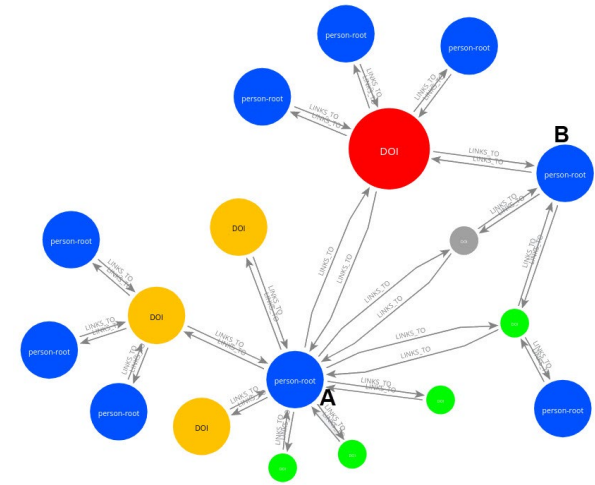
Ricgraph

Information in typical sources



	persons	sub orgs	pubs	research outputs		
				datasets	software	other
OpenAlex	√		√			
Pure	√	√	√	√	√	√
Research Software Directory	√				√	
UU staff pages	√					√
Yoda	√			√		

What can you do with Ricgraph?



Answers to questions like:

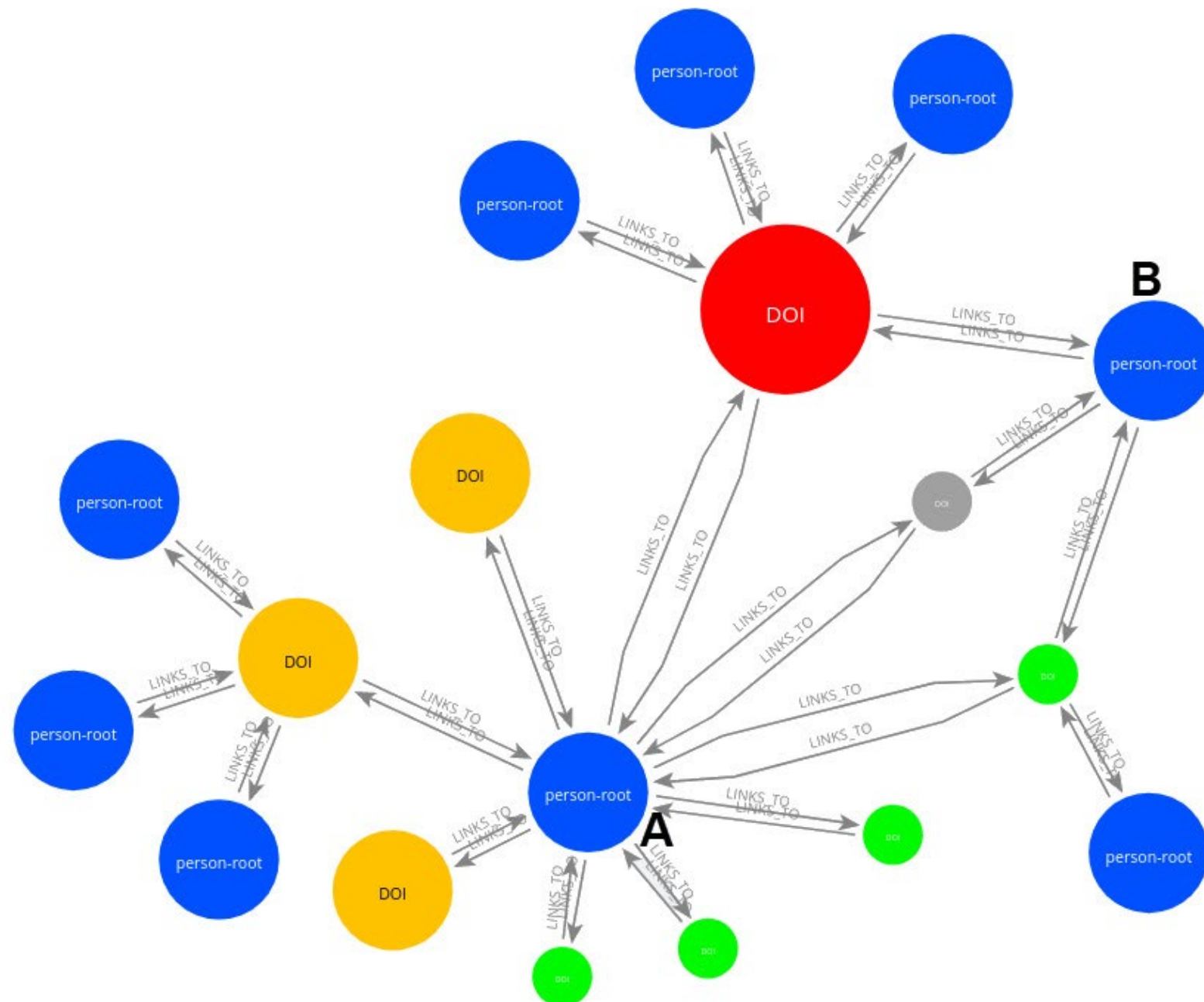
- What are the research outputs of a person?
- Who has contributed to a research output?
- With whom has a person worked?
- What research outputs have two persons in common?
- What identifiers does a person have?
- Visual inspection.

Research output = article, book, dataset, software, ...

Identifier = ORCID, ISNI, SCOPUS_ID, email, name, GitHub, Twitter, ...

Everything in one graph

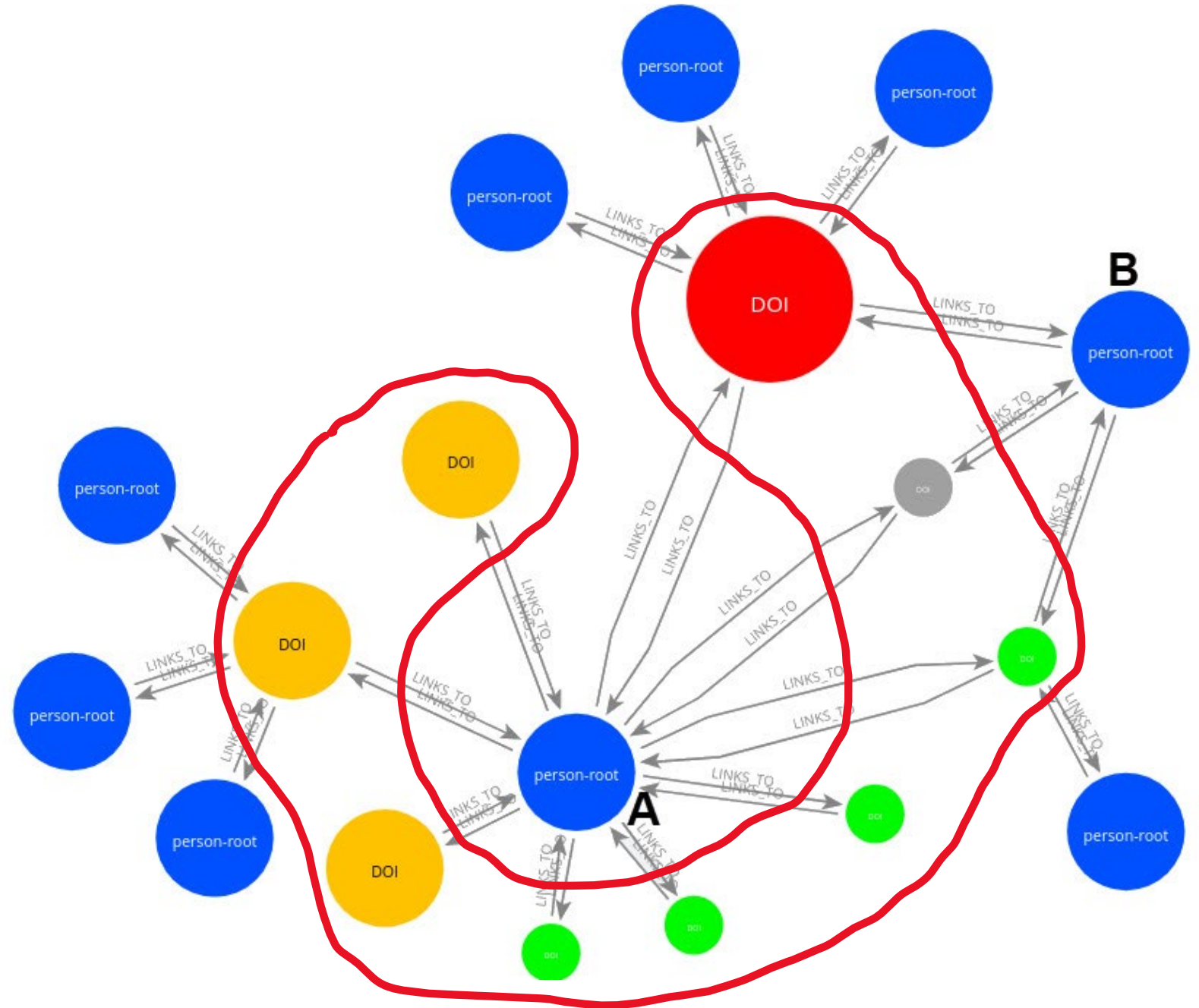
- blue = person
 - yellow = article
 - green = dataset
 - red = software
 - grey = other
-
- large node = from RSD
 - medium = from Pure
 - small = from Yoda



What can Ricgraph do?

What are the research outputs of person A?

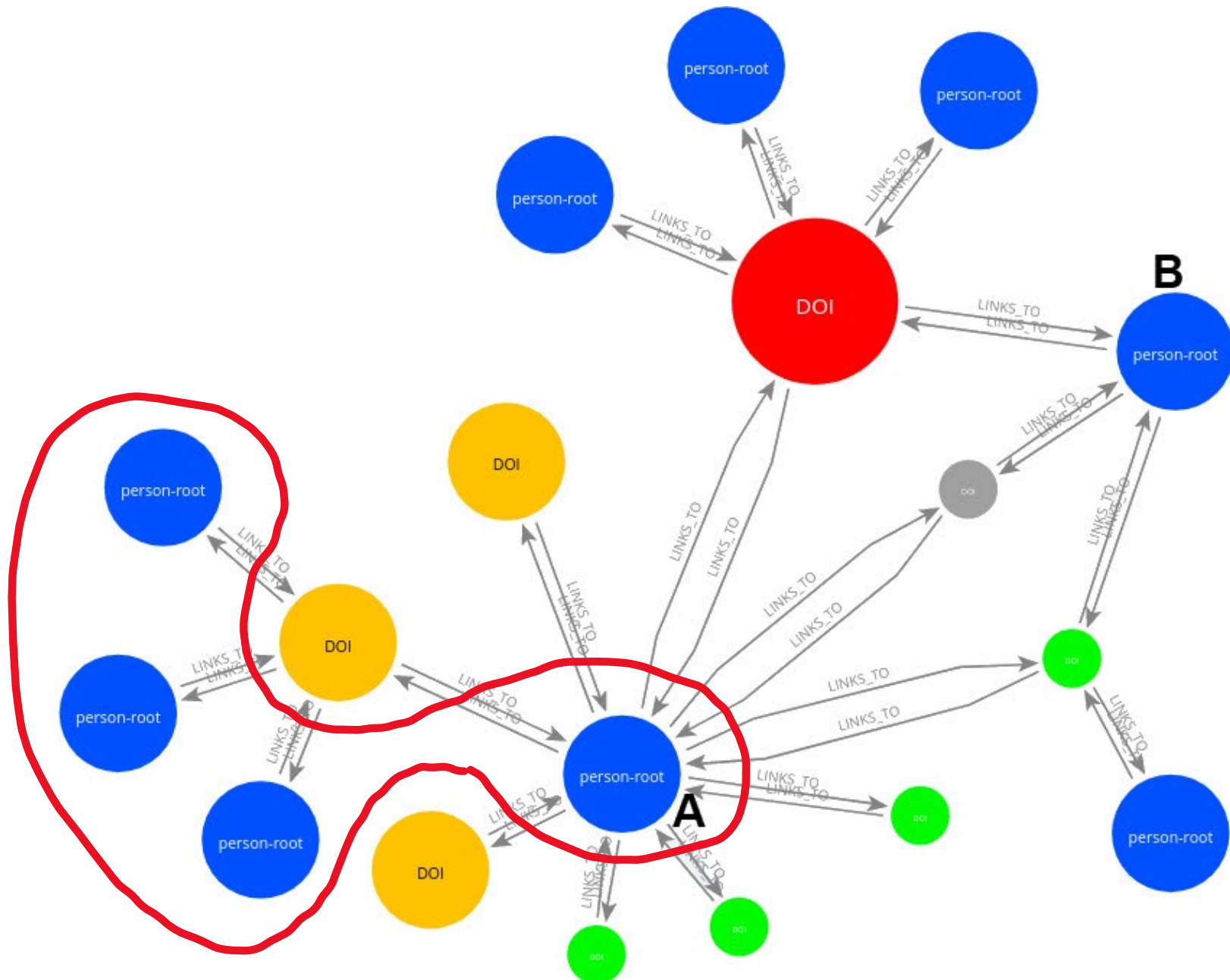
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What can Ricgraph do?

Who has contributed to a research output?

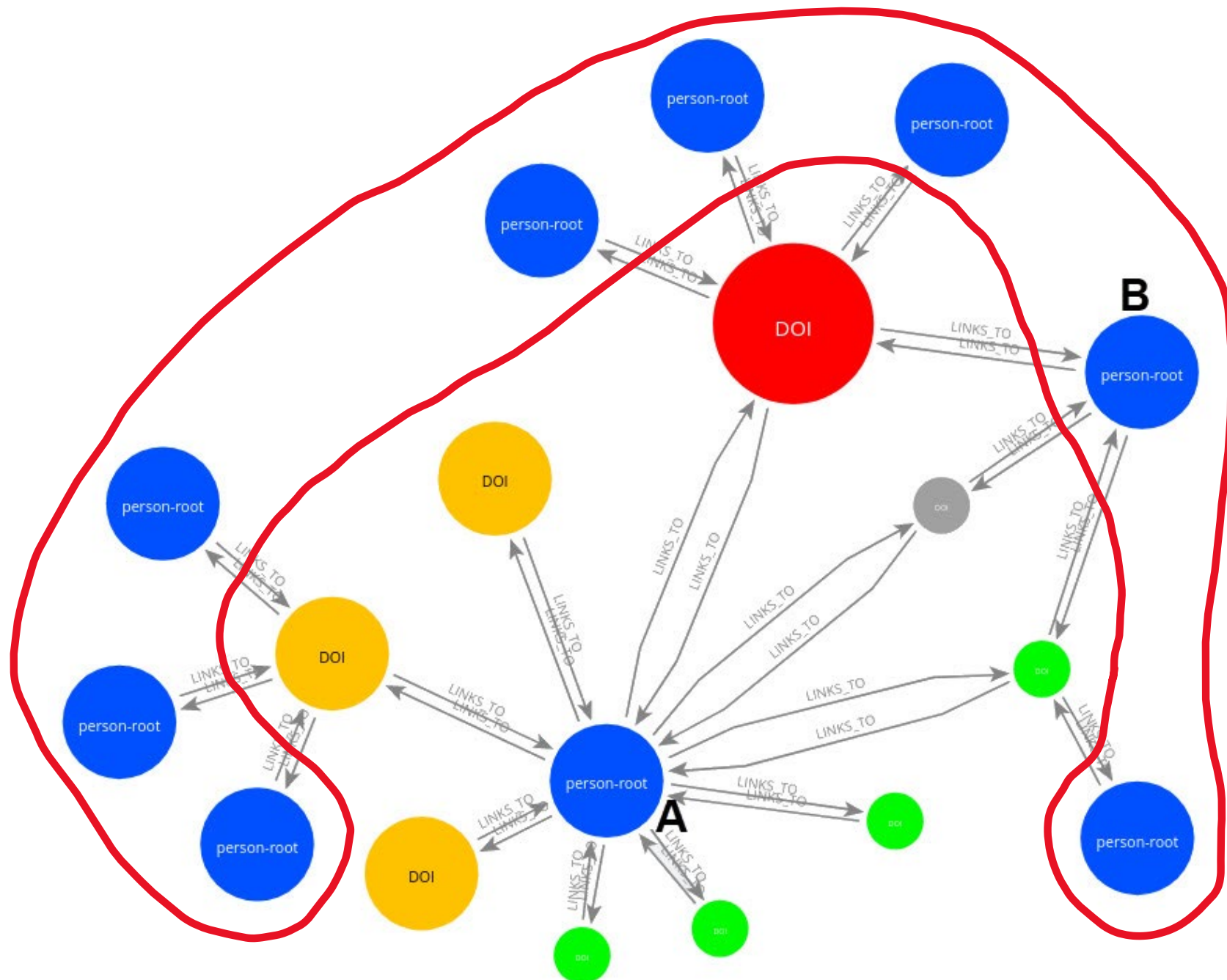
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What can Ricgraph do?

With whom has person A worked?

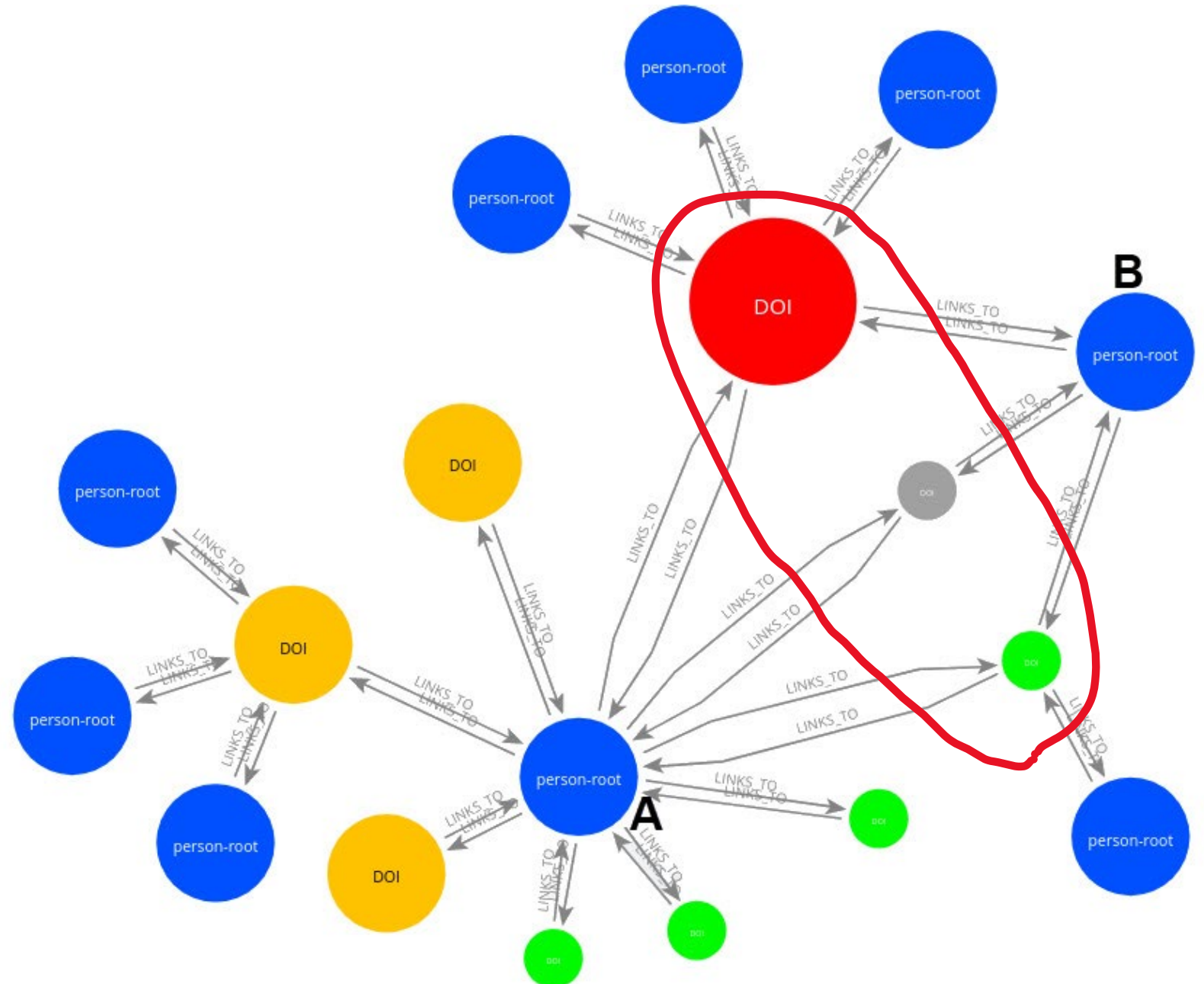
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What can Ricgraph do?

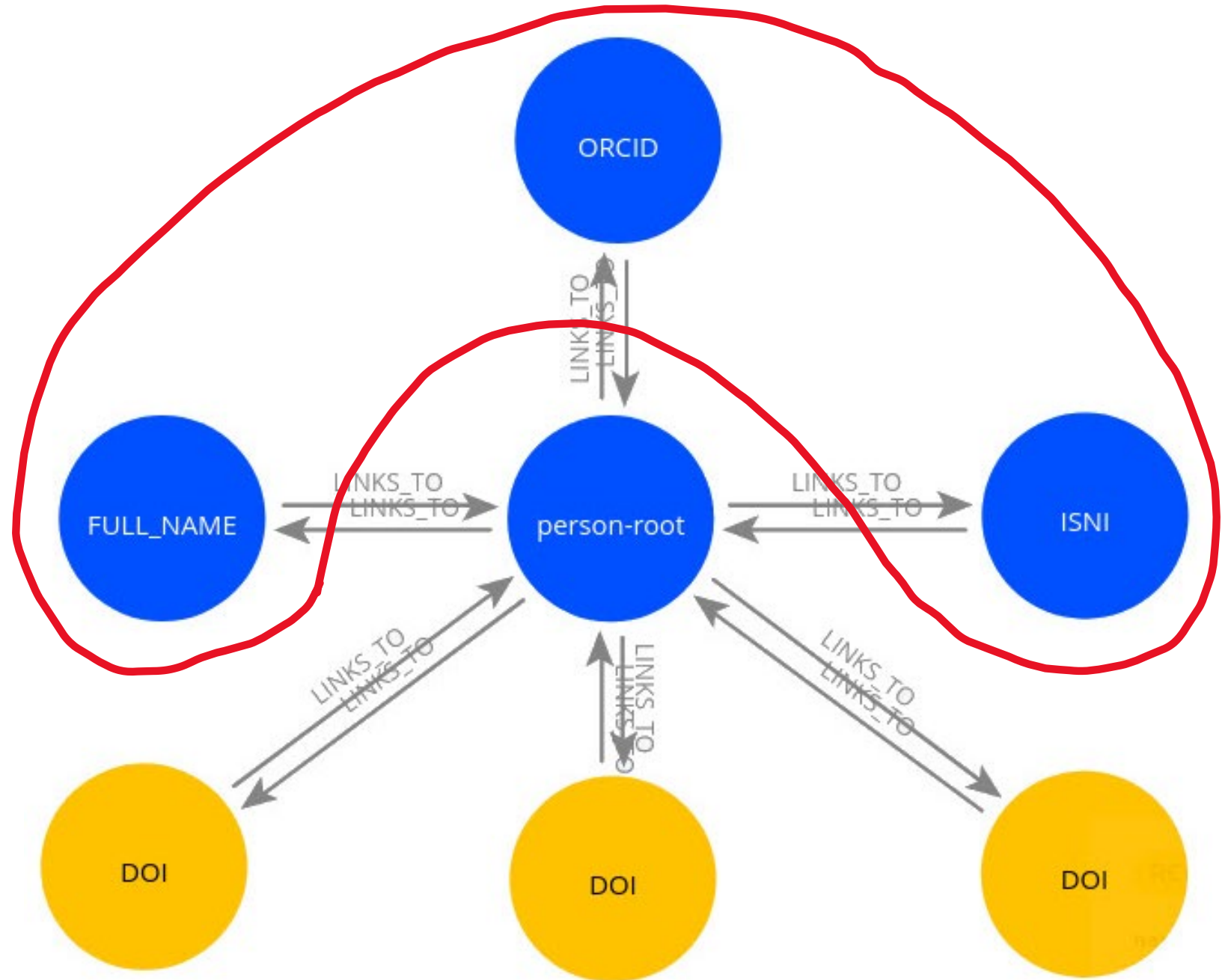
What research outputs have person A and person B in common?

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What can Ricgraph do?

What identifiers does a person have?

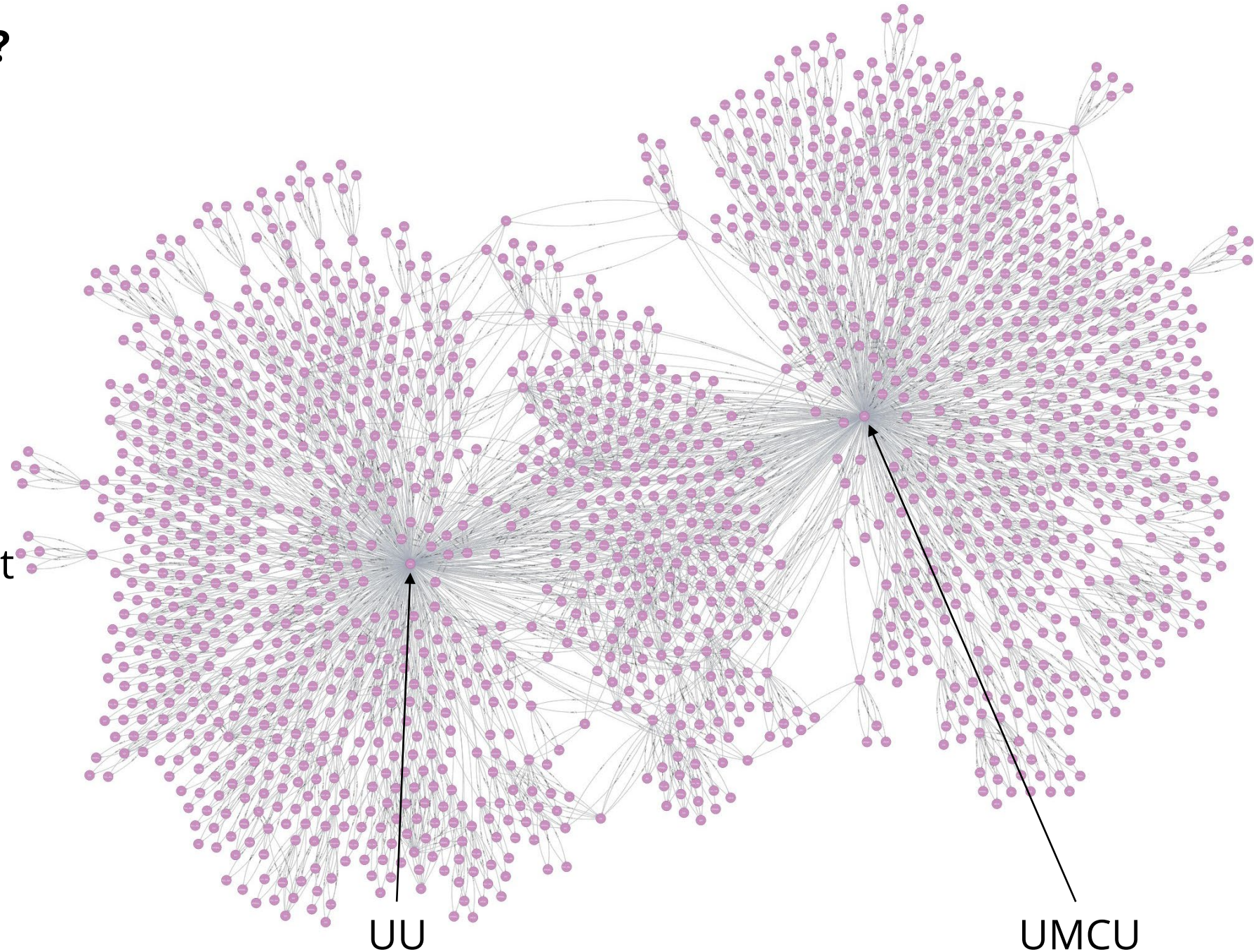


- blue = person
- yellow = article Pure

What can Ricgraph do?

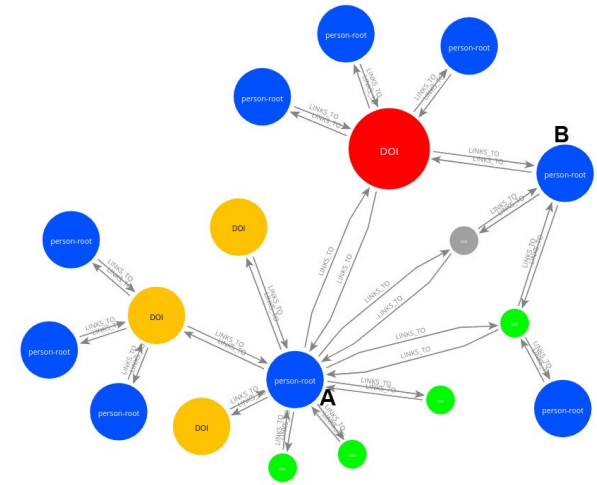
Visual inspection: a very small harvest of persons and publications of

- OpenAlex Utrecht University
- OpenAlex University Medical Center Utrecht



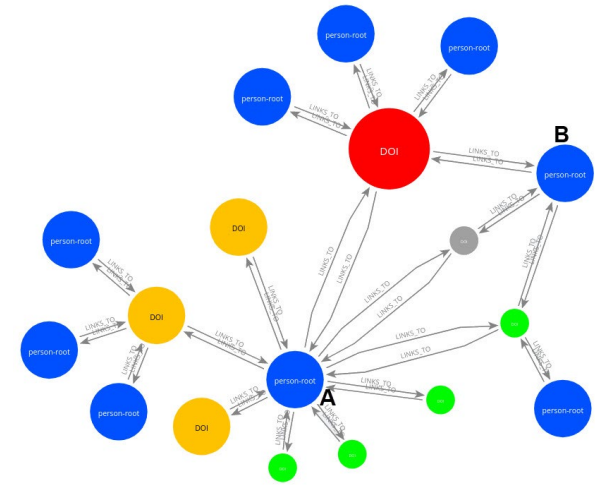
Demo - videos

- Various “person” records of one researcher (1m24s)
- Outputs connected to that researcher (24s)
- Same, software expanded (38s)



Some lessons learned

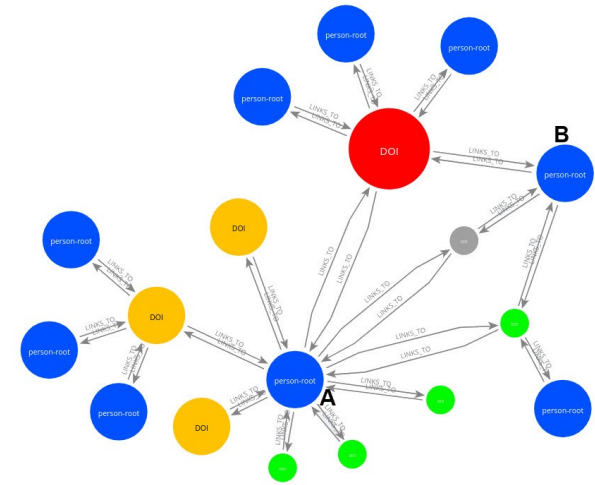
- Without identifiers we are nowhere
- We need to be able to resolve any identifier to any other
- I think only one preferred identifier will not work
- A graph is the way to go! 😊



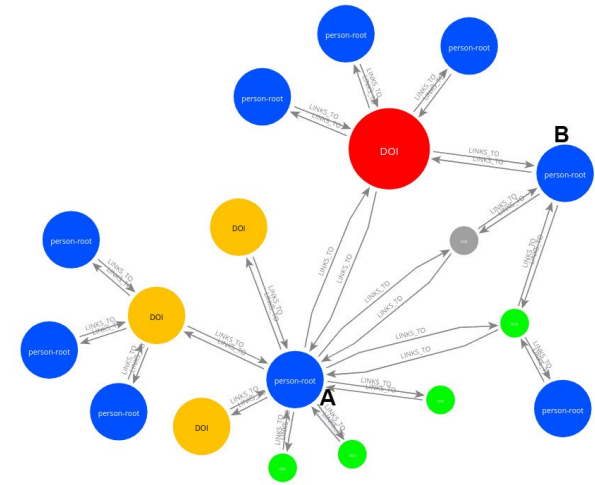
You can install and use Ricgraph yourself!

Identifier = ORCID, ISNI, SCOPUS_ID, email, name, GitHub, Twitter, ...

Questions?



Links



- GitHub (software, documentation and videos): <https://github.com/UtrechtUniversity/ricgraph>
- Research Software Directory: <https://research-software-directory.org/software/ricgraph>
- Zenodo: <https://doi.org/10.5281/zenodo.7524314>

More information, presentations, demos, install workshops:

- Rik D.T. Janssen, r.d.t.janssen@uu.nl



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Sharing science,
shaping tomorrow