

Is openness heritable?

The transmission of integrity from mentor to mentee

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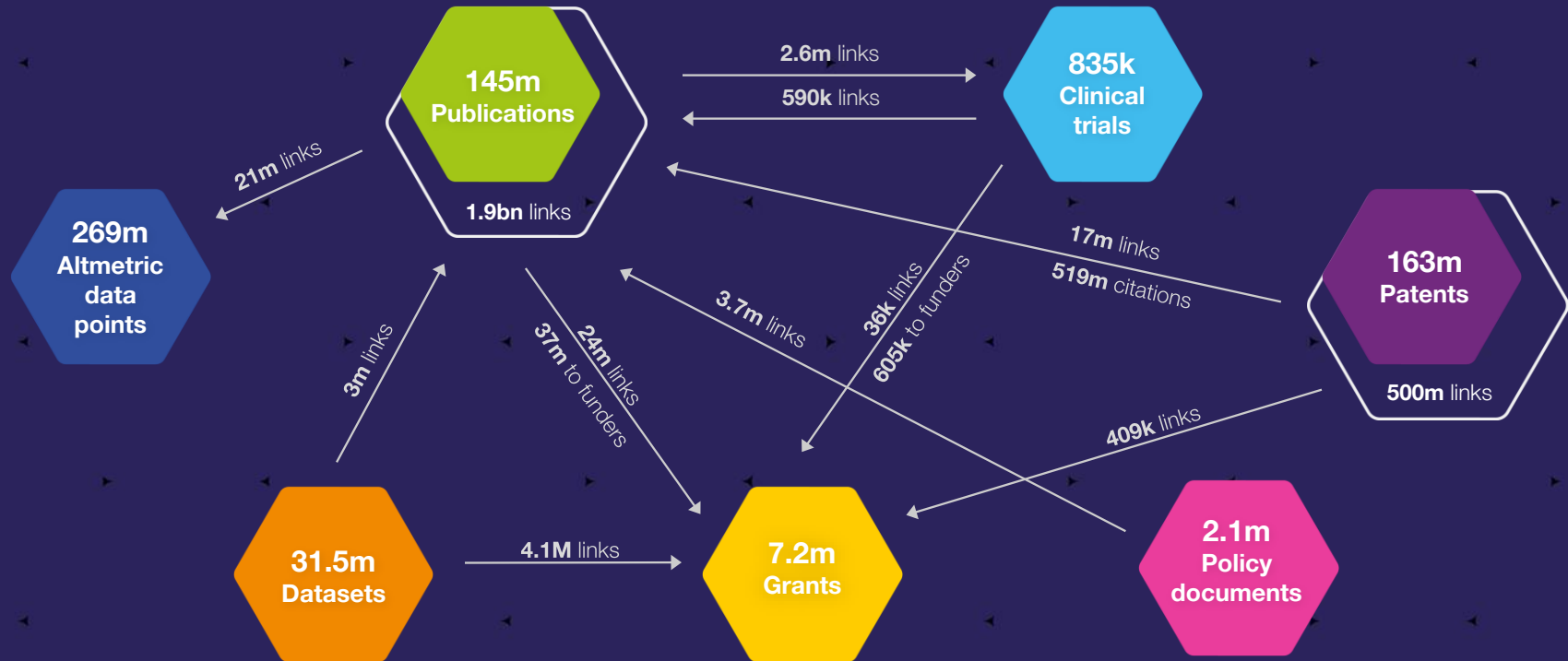
Mike Taylor, Head of Data Insights

The transmission of integrity

How are practices that are consistent with integrity transmitted? Do researchers who are committed to open access pass that conviction on to their supervisees?

- The Dataset
 - Authorship
 - Open Access
- Transformation
 - Mentorship relationship
 - Open Access percentage
- Descriptive Analysis and Results
 - Statistical analysis
 - Next steps

Content and links in Dimensions



Underlying data and relationships

Publications

Open vs. closed access

Fields of research

Authorship position

Affiliation

Grants

(Co)Principal Investigator(s)

Mentorship

Co-authorship pairs

Seniority

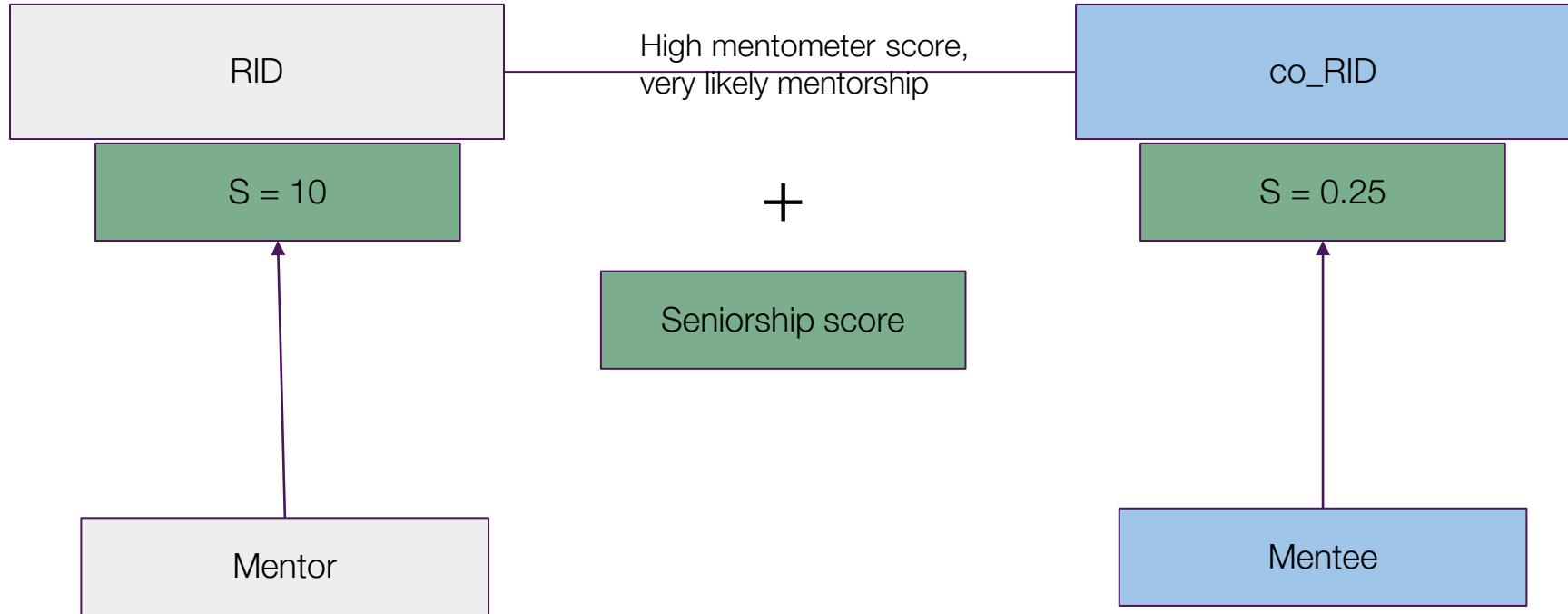
Frequency of authorship

Co-investigators of grants

Mentorship



Mentometer + Seniorship



Mentorship database

- Using this information we have cross-matched ALL researchers available in Dimensions and their collaborators:

mentorship_database

QUERY SHARE COPY SNAPSHOT DELETE EXPORT REFRESH

SCHEMA	DETAILS	PREVIEW	LINEAGE	DATA PROFILE	DATA QUALITY						
Row	rid	rid_current_affiliation	rid_first_name	rid_last_name	rid_name	rid_total_publici	rid_total_grants	rid_first_publici	rid_last_publici	rid_pub_age	
1	ur.013062202635.22	null	水野	神岡	水野 神岡	3	0	1972	1977	5	
2	ur.01146771306.04	grid.1003.2	Geoffrey Charles	Nicholson	Geoffrey Charles Nicholson	226	16	1985	2022	37	
3	ur.010634573077.64	grid.55325.34	Linda Karlsen	Sørgjerd	Linda Karlsen Sørgjerd	1	0	2020	2020	0	
4	ur.01207006366.39	grid.410843.a	ikuo	Okafuji	ikuo Okafuji	32	0	2002	2021	19	
5	ur.066167725.28	grid.469490.6	Judith M S	Prewitt	Judith M S Prewitt	29	0	1965	1984	19	
6	ur.012200271742.06	grid.256774.5	Vadivel	Jagasivamani	Vadivel Jagasivamani	1	0	2023	2023	0	
7	ur.0646620211.38	null	Arabinda	Chaudhuri	Arabinda Chaudhuri	81	2	1998	2023	25	
8	ur.06656036345.55	grid.5284.b	Christine Van	Broeckhoven	Christine Van Broeckhoven	44	47	1987	2022	35	
9	ur.01014221336.62	grid.417072.7	Tissa H	Wijeratne	Tissa H Wijeratne	186	0	2005	2024	19	
10	ur.012335721574.09	grid.16872.3a	René H	Verheijen	René H Verheijen	13	0	1993	2010	17	
11	ur.01355506102.64	grid.48336.3a	Martha S	Linet	Martha S Linet	521	15	1984	2023	39	
12	ur.01361127560.78	grid.19445.b	Yu-Xiong Richard	Su	Yu-Xiong Richard Su	168	2	2004	2024	19	
13	ur.01157773071.34	grid.412807.8	John Atlas	Phillips	John Atlas Phillips	316	16	1977	2023	46	
14	ur.01214025341.53	null	Fatma	Harzallah	Fatma Harzallah	32	0	1999	2014	15	
15	ur.0617563724.55	grid.259979.9	Michael R	Neuman	Michael R Neuman	118	10	1966	2015	49	
16	ur.01204262074.71	grid.488978.2	Stefano	Omboni	Stefano Omboni	326	0	1989	2023	34	
17	ur.067312311.24	grid.412889.e	Fernando	Montero-Gel	Fernando Montero-Gel	5	0	1992	2003	11	
18	ur.011575037302.48	null	Joe	Allison	Joe Allison	2	0	1977	1978	1	
19	ur.070661003.52	grid.189509.c	Banks	Anderson	Banks Anderson	8	0	1964	1979	15	
20	ur.0112547160.14	grid.18919.38	S A Limborska	Limborska	S A Limborska Limborska	230	2	1972	2023	51	
21	ur.01365213423.45	grid.266515.3	Ivan	Damjanov	Ivan Damjanov	335	3	1970	2022	52	
22	ur.015114626671.96	null	RA	Fisher	R A Fisher	2	0	1966	1968	2	

Results per page: 50 1 - 50 of 959948438

Eligibility

- Positive relationship: RID (researcher_id) = mentor and co_RID (co-researcher_id) = mentee
- “Very high” mentorship likelihood
- Last publication for both mentor and mentee was after 2000, and publication age is less than 75 years old
- Mentor and mentee have published between 3 and 5000 publications together (there were some outliers).

- Average 4.63 ± 5.38 years collaboration
- Average 9.79 ± 2.76 publications together
 - Average 6.85 ± 5.61 publications at the same institution
- Average 1.53 ± 1.31 grants together

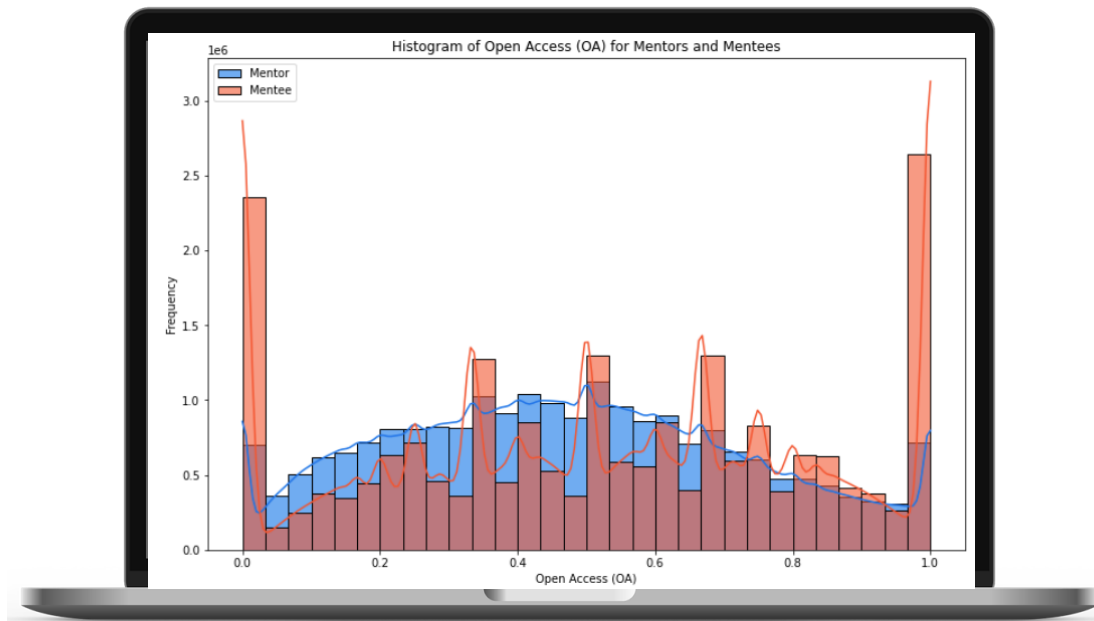
Mentorship characteristics

Value	Mentor	Mentee	Relation (together)
Number publications	173.95 ± 237.24	41.74 ± 103.97	9.79±2.76
Number grants	4.12 ± 9.36	0.71 ± 3.41	1.53±1.31
First publication year	1997.57 ± 12.02	2010.41 ± 8.50	4.63±5.38* (years publishing together)
Last publication year	2022.09 ± 3.66	2020.01 ± 5.29	
Publication Age	24.51 ± 11.89	9.59 ± 8.26	

Open Access overall

Mentor:
 $47.43 \pm 26.53\%$

Mentee:
 $52.49 \pm 32.10\%$



A vibrant, multi-colored ink splash in shades of purple, blue, green, yellow, and orange against a white background. The colors are layered and blended, creating a rich, textured effect. The text is centered over the middle of the splash.

Do mentors pass on
their open access
practices?

The longer researchers
published together, and
the more publications,
the stronger the effect.



Regression results for res_oa_avg_oa influencing co_rid_res_oa_avg_oa:

OLS Regression Results

```
=====
Dep. Variable:    co_rid_res_oa_avg_oa    R-squared:                0.586
Model:           OLS                    Adj. R-squared:          0.586
Method:          Least Squares           F-statistic:             9.153e+04
Date:            Fri, 31 May 2024        Prob (F-statistic):      0.00
Time:            14:51:25                Log-Likelihood:          85187.
No. Observations: 259020                AIC:                    -1.704e+05
Df Residuals:    259015                BIC:                    -1.703e+05
Df Model:        4
Covariance Type: nonrobust
=====
```

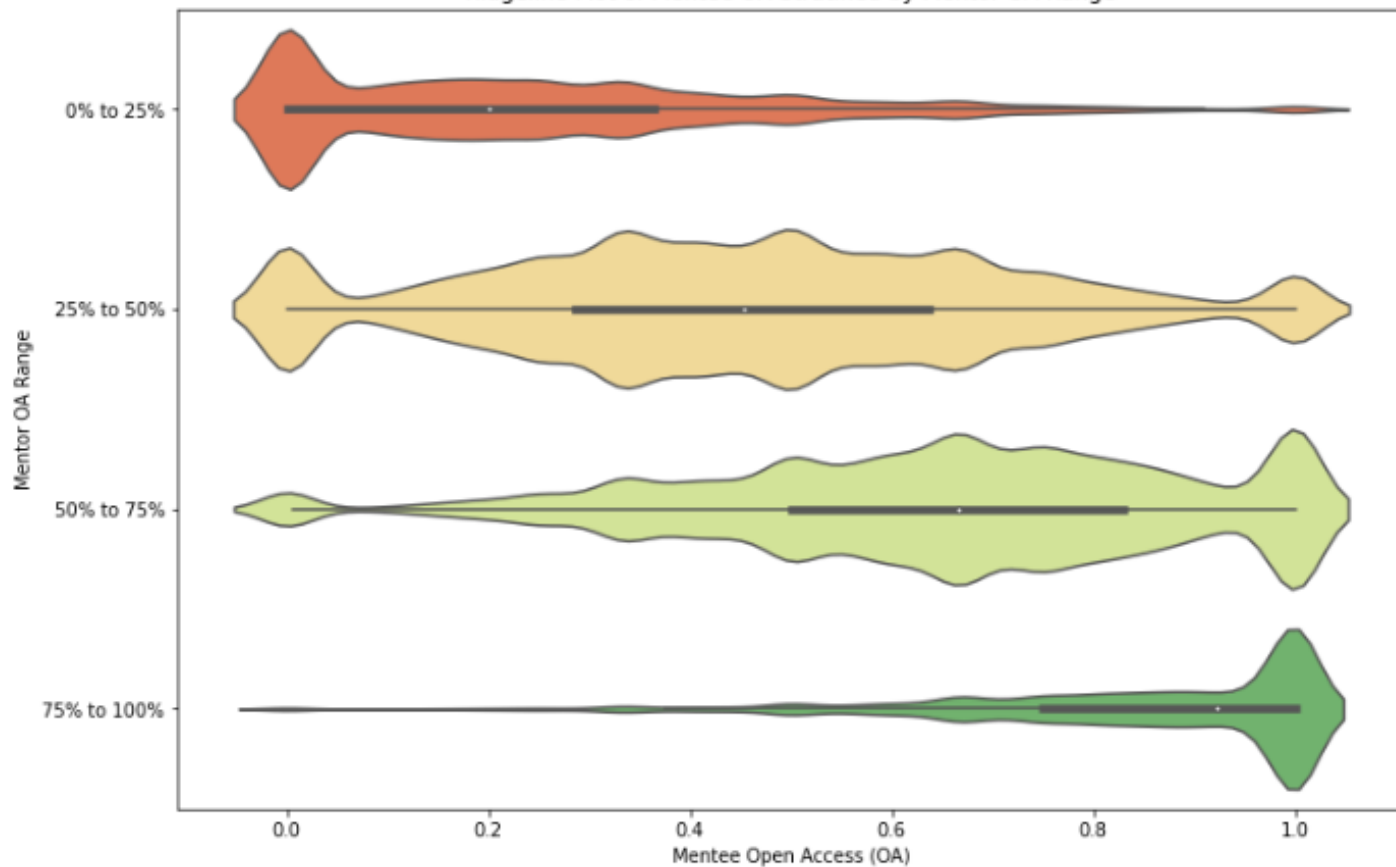
```
=====
              coef    std err          t      P>|t|      [0.025    0.975]
-----+-----
const                0.0919      0.001    99.219    0.000      0.090     0.094
rid_res_oa_avg_oa    0.9294      0.002   603.947    0.000      0.926     0.932
relation_pub_count  -0.0001     1.01e-05  -10.498    0.000     -0.000    -8.61e-05
relation_years_together_pub -0.0004     6.12e-05   -6.688    0.000     -0.001    -0.000
relation_grant_count  0.0022      0.000     7.908    0.000      0.002     0.003
=====
```

```
=====
Omnibus:            6257.575    Durbin-Watson:          1.996
Prob(Omnibus):      0.000    Jarque-Bera (JB):       13226.752
Skew:               0.130    Prob(JB):               0.00
Kurtosis:           4.076    Cond. No.                238.
=====
```

Indication that if a mentor publishes 100% open access, mentee is up to 91.9% more likely to also publish open access.

Highly significant

Ridgeline Plot of Mentee OA Stratified by Mentor OA Range



Context is everything

What comes next?

- Fields of research
- Change over time

- Data/code availability
- Ethical Approval

- Retractions?

