Center for Language and Cognition Groningen (CLCG)

Annual Report 2021

Factsheet CLCG Annual Report 2021

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Mission, strategy & policy

The mission of CLCG is to conduct and support high-quality linguistic research and disseminate the results of this research to the international scientific community and to society at large. From a variety of monodisciplinary and multidisciplinary perspectives, CLCG focuses on computational linguistics, discourse and communication, neurolinguistics and language development, and theoretical and empirical linguistics. CLCG sets the following priorities, contributing to the University of Groningen's societal research themes Healthy Ageing and Sustainable Society:

- CLCG contributes to the theme Healthy Ageing with its research on health communication, and with its research on typical and atypical language development and use across the lifespan.

- CLCG contributes to the theme Sustainable Society with its research on multilingualism, mutual understandability between languages, literacy development and language teaching.

- CLCG has a natural interest and special responsibility for the Dutch languages and dialects, especially those spoken in the northern part of the Netherlands (Dutch, Frisian, and Lower Saxon, including Grunnings).

1.   Organization

The organizational structure of CLCG did not change in comparison to the previous year.

1.1 Composition staff CLCG

The table below gives an overview of the number and fte's of staff members and PhD's of CLCG for the period 2019-2021.

Table 1. *Research Staff CLCG*

Year	2019	2020	2021
	# / FTE	# / FTE	# / FTE
Assistant professor	35 / 10,5	36 / 12,0	36 / 12
Associate professor	13 / 4,5	11 / 3,91	11 / 3,7
Full professor	15 / 5,3	15 / 5,3	14 / 5
Postdocs	5 / 3,0	7 / 4,7	5 / 3,5
PhD candidates	63 / 51,8	69 / 47,2	*41 / 42,6*
Total research staff	***131 / 75,0***	***138 / 73,1***	***107 / 66,8***
Support staff	1 / 0,5	1 / 0,5	-
Visiting fellows	-	-	-
Total staff	**132 / 75,5**	**139 / 73,6**	**107 / 66,8**

Note. (vgl. SEP Table E2: Input of research staff)

1.2 Size of the CLCG research groups

The tables 2 until 5 below show the number and fte's of staff members and PhD's including the type of funding per CLCG research group in 2021.

Abbreviations:
WP 1: Direct funding
WP 2: NWO, KNAW, Fryske Akademie
WP 3 excl. ERC: Government ministries, charitable organizations, or industry
ERC: European research Council

1.2.1   Computational Linguistics Staff

Table 2. *Research Staff (Computational Linguistics)*

Source of funding (# / fte)	WP1	WP2	WP3	ERC	Total
1. Professor	3 / 1,2	-	1 / 0,0	-	4 / 1,2
2. Associate professor	2 / 0,7	-	2 / 0,3	-	4 / 0,9
3. Assistant professor	8 / 2,8	-	-	-	8 / 2,8
4. Researcher	-	-	1 / 1,0	-	1 / 1,0
Total staff (ex. PhD's)	**13 / 4,7**	**-**	**4 / 1,3**	**0 / 0**	**14 / 5,9**
5. PhD candidates					
a. Faculty appointed PhD	*3 / 3,0*	*4 / 2,9*	*-*	*-*	*7 / 5,9*
b. Contract PhD	*7 / 6,3*	*-*	*-*	*-*	*7 / 6,3*
Total 1 t/m 5a (ex. contract PhD)	*16 / 7,7*	*4 / 2,9*	*4 /1,3*	*-*	*24 / 11,9*
Total staff (incl. contract PhD's)	**23 / 14,0**	**4 / 2,9**	**4 / 1,3**	**0 / 0**	**31 / 18,2**

1.2.2   Discourse and Communication Staff

Table 3. *Research Staff (Discourse and Communication)*

Source of funding (# / fte)	WP1	WP2	WP3	ERC	Total
1. Professor	3 / 0,7	-	-	-	3 / 0,7
2. Associate professor	1 / 0,4	-	-	-	1 / 0,4

	WP1	WP2	WP3	ERC	Total
3. Assistant professor	9 / 3,1	-	-	-	9 / 3,1
4. Researcher	-	-	-	-	-
Total staff (ex. PhD's)	**13 / 4,1**	**0 / 0**	**0 / 0**	**0 / 0**	**13 / 4,1**
5. PhD candidates		1 / 0,8			1 / 0,8
a. Faculty appointed PhD	-	-	-	-	-
b. Contract PhD	*6 / 3,8*	-	-	-	*6 / 3,8*
Total 1 t/m 5a (ex. contract PhD)	13/ 4,1	1 / 0,8	-	-	14 / 4,9
Total staff (incl. PhD's)	**19 / 7,9**	**1 / 0,8**	**0 / 0**	**0 / 0**	**20 / 8,7**

1.2.3 Neurolinguistics and Language Development Staff

Table 4. *Research Staff (Neurolinguistics and Language Development)*

Source of funding (# / fte)	WP1	WP2	WP3	ERC	Total
1. Professor	4 /1,4	1 / 0,5	-	-	5 / 1,9
2. Associate professor	3 / 0,9	1 / 0,4	-	-	4 / 1,3
3. Assistant professor	10 / 3,5	-	1 / 0,1	-	11 / 3,6
4. Researcher	-	1 / 0,8	1 / 1,0	-	2 / 1,8
Total staff (ex. PhD's)	**17 / 5,8**	**3 / 1,7**	**2 / 1,1**	**0 / 0**	**22 / 8,6**
5. PhD candidates					
a. Faculty appointed PhD	*3 / 1,7*	*4 / 3,6*	-	-	*7 / 5,4*
b. Contract PhD	*17 / 12,2*		-	-	*17 / 12,2*
Total 1 t/m 5a (ex. contract PhD)	20 / 7,5	7 / 5,2	2 / 1,1	-	29 / 14,0
Total staff (incl. contract PhD's)	**37 / 19,7**	**7 / 5,2**	**2 / 1,1**	**0 / 0**	**46 / 26,0**

1.2.4 Theoretical and Empirical Linguistics Staff

Table 5. *Research Staff (Theoretical and Empirical Linguistics)*

Source of funding (# / fte)	WP1	WP2	WP3	ERC	Total
1. Professor	4 / 1,5	-	-	-	4 / 1,5
2. Associate professor	5 / 1,5	-	1 / 0,0	-	6 / 1,5
3. Assistant professor	7 / 2,0	1 / 0,4	1 / 0,2	-	9 / 2,5
4. Researcher	-	1 / 0,3	1 / 0,4	-	2 / 0,7
Total staff (ex. PhD's)	**16 / 5,0**	**2 / 0,7**	**3 / 0,6**	**0 / 0**	**21 / 6,2**
5. PhD candidates					
a. Faculty appointed PhD	-	-	-	-	*0 / 0,0*
b. Contract PhD	*10 / 8,3*	-	-	-	*10 / 8,3*
Total 1 t/m 5a (ex. contract PhD)	16 / 5,0	2 / 0,7	3 / 0,6	-	21 / 6,2
Total staff (incl. contract PhD's)	**26 / 13,3**	**2 / 0,7**	**3 / 0,6**	**-**	**31 / 14,7**

2.   Funding

Direct funding of CLCG research in 2021 contributed 71% of the total CLCG funding. This is a higher contribution than in earlier years (ranging from 52% to 67% in the previous years).

It is not immediately clear if this is a trend or natural variation. External funding (both research grants and contract research) usually depends on a small number of relatively large projects. The amount of external funding therefore will vary somewhat. Another factor may be the growing student population which leads to hiring new staff members. It will typically take a few years before these new staff members will be successful in obtaining external funding.

In any case, CLCG (together with the new Funding Officer of the faculty) continues to stimulate and support staff members in securing external funding. Currently, a number of promising initiatives are underway.

Table 6. *Research Funding*

Year	2020		2021	
	FTE	%	FTE	%
Funding:				
Direct funding (1)	49.3	67%	47.2	71%
Research grants (2)	13.2	18%	8.7	13%
Contract research (3)	10.6	15%	10.9	16%
Other (4)	0.0	0%	0.0	0%
Total funding	**73.1**	**100%**	**66.8**	**100%**
Expenditure:				
Personnel costs	3,282,085.6	80%	3,098,402.0	79%
Material costs	566,728.0	14%	464,295.0	12%
Other costs	257,796.5	6%	365,137.0	9%
Total expenditure	**4,106,610**	**100%**	**3,927,834**	**100%**

Note. (vgl. SEP Table E3: Funding)

2.1 Research grants

Table 7 shows the research grants obtained by CLCG research staff members (value > 10.000).

Table 7. *Research Grants*

Title	Principal Investigator	Start date	End date	Funding body	Amount in €
VLYC: neuro-psychological assessment	Vania Correia de Aguiar (NLD)	1-12-2021	31-7-2022	Stichting Kinderneuro-psychologie Noord Nederland	20.399

Verb learning in children with PPF tumours	Vania Correia de Aguiar (NLD)	1-2-2022	31-2-2027	NWO Sociale en Geestes-wetenschappen	799.949
Heritage on Global Change	Joanna Duarte (TEL)	1-6-2021	31-5-2024	NWO Sociale en Geestes-wetenschappen	211.073
Boosting African Languages in Education	Aurélie Joubert (TEL)	15-1-2021	14-1-2024	Education, Audiovisual and Culture Executive Agency Erasmus+	758.012
MaCoCu	Antonio Toral Ruiz (CL)	1-6-2021	31-5-2023	Innovation and Networks Executive Agency (INEA)	683.693
VIS21032	Marije Michel (NLD)	1-3-2022	30-6-2023	OCW	15.000
Wetenschaps-communicatie	Martijn Wieling (CL)	1-4-2021	30-6-2022	KNAW Wetenschapsfondsen	10.000
Total					**2.498126**

3. Academic research output

The research output of CLCG shows an overall increase in 2021. The summed output of 181 is higher in comparison to earlier years (ranging from 155 to 171 in 2019 and 2020 respectively). This increase is striking in the context of the COVID-19 crisis the last two years. Several conferences and related research activities were initially canceled or postponed. Furthermore, staff members had to invest time and energy in adapting their teaching from on-site to on-line. It might be that the effects of this crisis will be visible in the upcoming years, since there often is quite some delay between the actual work that goes into a research article and its publication. However, this was also expected for 2021 and such was not (yet) the case

The large NLD group has been very productive, thanks also to the large number of PhD students. A further striking number is the very large number of conference publications of the CL group; conference publications are traditionally more important in this research area. The output of the DISCO group is satisfactory, given the very small number of PhD students that are currently participating in that group. The output of the TEL group is not satisfactory: 26 publications by 30 group members is clearly still below par, even if somewhat better than 2020. In October 2021, the CLCG director had convened the TEL group to discuss this. In the meantime, problems with the registration of publications in Pure have been solved (as far as we know), but this clearly was not the main cause of the problem. Recent hires and the recently awarded VIDI project of Maria Mazzoli give rise to some optimism with respect to the next years.

Table 8. *Research Output*

CLCG	2019	2020	2021
Refereed articles	90	96	99
Non-refereed articles	0	3	4
Books	6	4	6
Book chapters	15	27	17

PhD theses	9	9	15
Conference papers	30	22	35
Professional publications	5	9	4
Publications aimed at the general public	0	1	1
Total publications	**155**	**171**	**181**

Note. (vgl. SEP 2019-2021 Table D3b)

Table 9. *Research Output per CLCG theme group*

Academic research output 2021	Computational Linguistics	Discourse & Communication	Neurolinguistics and Language Development	Theoretical and Empirical Linguistics
Refereed articles	9	28	54	4
Books	2	3	3	3
Book chapters	5	9	8	19
PhD theses	1	1	12	-
Conference papers	32	0	4	-
Total publications	**48**	**41**	**81**	**26**

Table 10. *Research Output per CLCG theme group 2019-2021*

Academic research output 2021	Computational Linguistics	Discourse & Communication	Neurolinguistics and Language Development	Theoretical and Empirical Linguistics
2019	21	33	71	32
2020	54	34	77	21
2021	48	41	80	26
Total publications	**123**	**108**	**229**	**79**

5   PhD projects

5.1 Graduation rate (vgl. SEP Table E4: PhD candidates)

Table 11. *Graduation rate PhD students CLCG*

Enrolment			Success rates					
Starting year	Enrolment (male / female)	Total (M+F)	Graduated in year 4 or earlier	Graduated in year 5 or earlier	Graduated in year 6 or earlier	Graduated in year 7 or earlier	Not yet finished	Discon-tinued
2013	6	3	9	5 / 56 %	6 / 67%	7 / 78 %	-	0 / 0 %	1 / 11%
2014	4	5	9	-	6 / 67 %	-	8 / 89 %	0 / 0 %	1 / 11 %
2015	5	2	7	1 / 14 %	4 / 57 %	5 / 71 %	-	0 / 0 %	2 / 29%
2016	9	2	11	2 / 18 %	10 / 91 %	-	-	1 / 9 %	-
2017	10	3	13	2 / 15 %	5 / 38%	-	-	7 / 54 %	1 / 8 %
2018	9	3	12	3 / 25 %	-	-	-	9 / 75 %	-
2019	5	5	10	-	-	-	-	10 / 100%	-
2020	11	4	15	-	-	-	-	14 / 93 %	1 / 7 %
2021	3	3	6		-	-	-	6 / 100%	-
Total	**62**	**30**	**92**	**13**	**31**	**12**	**8**	**51 / 61%**	**6 / 6,5%**

Note. (vgl. SEP Table E4: PhD candidates)

For more information about the outflow of PhD-cohorts per VSNU-type we refer to Table 12 in attachment 1.

An important responsibility of the CLCG staff members concerns the timely completion of the PhD trajectories for which they are responsible. Most daily supervisors and promotors are aware of this responsibility. The CLCG director and CLCG coordinator are directly involved in a few important moments during the PhD trajectory. The CLCG coordinator ensures that new PhD students are aware of the CLCG infrastructure and CLCG organization by organizing personal meetings at the beginning of their contract. Another important moment concerns the Go/NoGo meeting after one year. In these meetings, the CLCG director evaluates the progress made by the PhD student in the first year and the plans for the coming years together with the PhD student and supervisors.

Regular meetings between PhD students and their supervisors are important and encouraged. CLCG stimulates that such meetings are held at fixed moments, at least once every two weeks, but ideally once a week. In the previous two years in which we all had to work from home mostly, CLCG has advocated that PhD students have more frequent regular meetings – to make up for the lack of informal meetings during coffee and lunch breaks. Yet, this long period of lock down may be expected to lead to a negative influence on the number of finished projects for the next few years, despite the efforts made.

6. Top CLCG key publications

Computational Linguistics

- Caselli, T., Hovy, E., Palmer, M., & Vossen, P. (Eds.) (2021). *Computational Analysis of Storylines: Making sense of events*. (Studies in Natural Language Processing). Cambridge University Press. https://doi.org/10.1017/9781108854221

- Lai, H., Toral Ruiz, A., & Nissim, M. (2021). Thank you BART! Rewarding Pre-Trained Models Improves Formality Style Transfer. In *Proceedings of the 59th Annual Meeting of the Association for Computational Linguistics and the 11th International Joint Conference on Natural Language Processing (ACL-IJCNLP 2021)* Association for Computational Linguistics, ACL Anthology.

- Liu, J., Cohen, S. B., Lapata, M., & Bos, J. (2021). Universal Discourse Representation Structure Parsing. *Computational Linguistics*, *47*(2), 445–476. https://doi.org/10.1162/coli_a_00406

- Rebernik, T., Jacobi, J., Jonkers, R., Noiray, A., & Wieling, M. (2021). A review of data collection practices using electromagnetic articulography. *Laboratory Phonology*, *12*(1), [6]. https://doi.org/10.5334/labphon.237

Discourse and Communication

- Ongena, Y. P., Yakar, D., Haan, M., & Kwee, T. C. (2021). Artificial Intelligence in Screening Mammography: A population survey of women's preferences. Journal of the american college of radiology, 18, 1, 79-86.

- van Poppel, L. (2021). The study of metaphor in argumentation theory. Journal of Argumentation, 35, 177–208.

- Possidónio, C., Prada, M., Graça, J. & Piazza, J. (2021). Consumer perceptions of conventional and alternative protein sources: A mixed-methods approach with meal and product framing. Appetite, 156, 104860.

Neurolinguistics and Language Development

- Maier, E., & Stokke, A. (Eds.) (2021). *The Language of Fiction*. Oxford University Press.

- Mognon, I., Scholten, I., Hukker, V., & Hendriks, P. (2021). Pragmatics is not a monolithic phenomenon, and neither is theory of mind: Response to Kissine. *Language*, *97*(3), e218-e227. https://doi.org/10.1353/lan.2021.0039

- Nijmeijer, S. E., van Tol, M. J., Aleman, A., & Keijzer, M. (2021). Foreign Language Learning as Cognitive Training to Prevent Old Age Disorders? Protocol of a Randomized Controlled Trial of Language Training vs. Musical Training and Social Interaction in Elderly With Subjective Cognitive Decline. *Frontiers in aging neuroscience*, *13*, 550180. https://doi.org/10.3389/fnagi.2021.550180

- Peng, H., Jager, S., & Lowie, W. (2021). A person-centred approach to L2 learners' informal mobile language learning. Computer Assisted Language Learning. https://doi.org/10.1080/09588221.2020.1868532

Theoretical and Empirical Linguistics

- Mazzoli, M., & Sippola, E. (2021). Mixed languages from core to fringe: Introduction to the volume. In M. Mazzoli, & E. Sippola (Eds.), *New Perspectives on Mixed Languages: From Core to Fringe* (pp. 1-26). (Language Contact and Bilingualism [LCB]; Vol. 18). Mouton de Gruyter. https://doi.org/10.1515/9781501511257-001

- Strandberg, J. A. E., Gooskens, C., & Schüppert, A. (2021). *Simultaneous bilingualism and speech style as predictors of variation in Finland-Swedish allophone production*. Paper presented at New Ways of Analyzing Variation 49, Austin, United States.

– Zwart, J-W., & Lindenbergh, C. (2021). Rethinking alignment typology. In A. Bárány, T. Biberauer, J. Douglas, & S. Vikner (Eds.), *Syntactic architecture and its consequences: Inside syntax* (pp. 23-50). (Open Generative Syntax; Vol. 11). Language Science Press. https://doi.org/10.5281/zenodo.4680298

7. Top most societally relevant publications and public engagement activities

Collectively, the ten output sources listed below have made an impact that spans beyond research due to its wide reach and has greatly increased the visibility of CLCG researchers. Talks and publications by CLCG scientists reaches a broad audience:

Malvina Nissim was invited to give a keynote about gender bias and artificial intelligence at the European Council on the International Women's Day (1). Another important keynote speech was given at a conference on Machine Translation and Human Creativity (3). Also three papers are included that increase the visibility of CLCG researchers at a wider audience(4, 5 & 6).

With radio and podcasts being an important outreach medium in the present-day, two of the initiatives above are podcasts (7, 10) and one was a radio item (2). The television interview (8) on national nighttime television generated much interest and resulted in greater visibility of linguistic work in general and that in Groningen in particular at a national level. The final product included as part of this list (9) is a lesson series in which NLD PhD students were involved, reflective of the make-up of the NLD group. The lesson package has been requested more than 50 times by secondary schools in the North of the Netherlands.

Computational Linguistics

1. Nissim, M. (2021). Keynote about gender bias and artificial intelligence at the European Council to open International Women's Day 2021, invited by the Equal Opportunities Office at the General Secretariat of the Council of the EU.

2. RUG doet in rijdend lab onderzoek naar Friese dialecten. (2021) Omrop Fryslân. Radio. https://www.omropfryslan.nl/nl/nieuws/1036467/rug-doet-in-rijdend-lab-onderzoek-naar-friese-dialecten.

3. Toral Ruiz, A., & Guerberof-Arenas, A (2021). Keynote speech at the International Conference Machine Translation and Human Creativity. Bologna Children's Book Fair

Discourse and Communication

4. Jansen, C. J. M., Koops van't Jagt, R., Reijneveld, S. A., van Leeuwen, E., de Winter, A. F., & Hoeks, J. C. J. (2021). Improving Health Literacy Responsiveness: A Randomized Study on the Uptake of Brochures on Doctor-Patient Communication in Primary Health Care Waiting Rooms. International Journal of Environmental Research and Public Health, 18, 9, 5025.

5. Nieboer, P., Huiskes, M., Cnossen, F., Stevens, M., Bulstra, S. K., & Jaarsma, D. A. D. C. (2021). Fingerprints of Teaching Interactions: Capturing and Quantifying How Supervisor Regulate Autonomy of Residents in the Operating Room. Journal of Surgical Education, 78, 4, 1197-1208.

6. Steenbakkers, J., Stukker, N., & de Glopper, K. (2021). Formuleerproblemen in leerlingenwerk en schoolboeken Nederlands: Een onderzoek naar de aansluiting tussen de leerstof en de formuleerproblemen van leerlingen. Pedagogische Studiën, 98, 27-45.

Neurolinguistics and Language Development

7. Keijzer, M. (May 2021). "Leef je langer als je twee talen spreekt." https://www.universiteitvannederland.nl/podcast/leef-je-langer-als-je-twee-talen-spreekt. [Universiteit van Nederland podcast]

8. Keijzer, M. (12 October 2021). "Twee talen spreken is goed voor de gezondheid?" https://www.evajinek.nl/onderwerpen/artikel/5259974/marcel-levi-merel-keijzer-taal-twee-talen-spreken-goed-voor-de [TV Appearnce Late nigh talk show Jinek]

9. Keijzer, M. & Ploeg, van der, M. (November 2021). 'Wat doet een professor?' Lesson series on science. https://www.rug.nl/society-business/scholierenacademie/leraren/op-school/lespakket-wat-doet-een-professor. [Scholierenacademie Groningen]

10. Michel, M. (March 2021). Podcast interview for lectures of foreign languages.

8.   Open Science

Figures 1 and 2 display the overview of open access publications of CLCG from the period of 2016-2021. Figure 1 shows the open access publications per category. Figure 2 shows open access versus no open access.

The analysis of the publications in Pure suggest a steady increase of open publications in the past years, where in 2021, 75% of publications fall in the open category, and only 4% fall in the closed category (see figure 1 and 2). CLCG advocates and supports open publications, even if no system is in place to cover potential costs for publishing in open access journals. In some areas (CL for instance) almost all relevant journals and conferences are open access without publication fee, but this is not the case for all relevant research areas. In 2020 and 2021, due to COVID, some researchers have redirected their travel money to pay for open access publication fees.
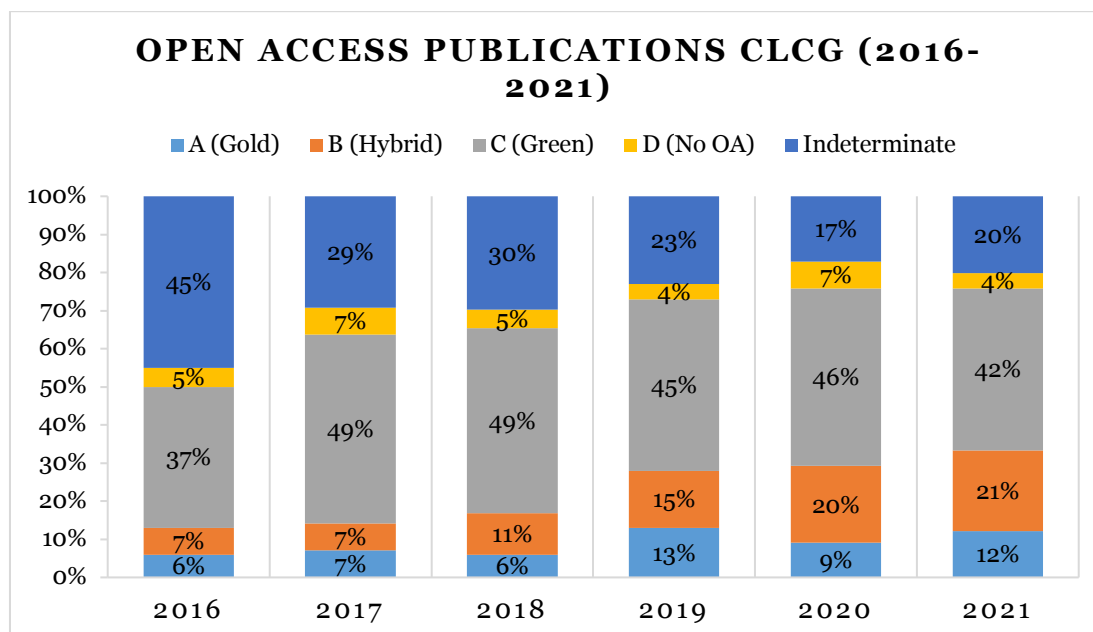
Figure 1. Pure analysis Open Access Publications CLCG per Category
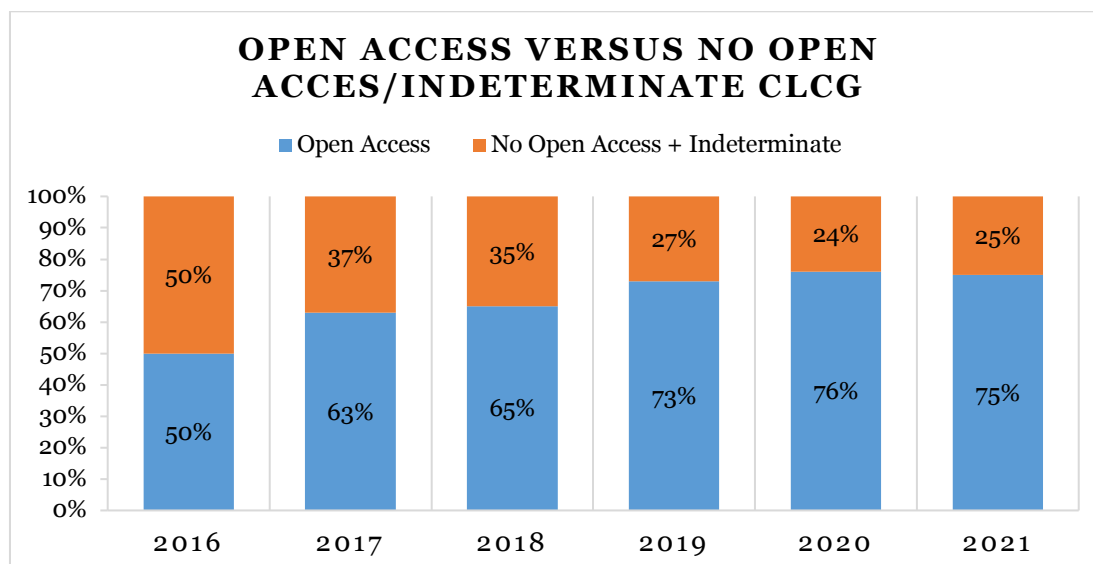

Figure 2. Open Access versus No Open Access Total CLCG

9.   Goal for the Upcoming years

9.1 To achieve the Scientific Aims

CLCG continues to aim for high-quality research, leading to publications in top journals and conferences which are cited widely by peers, and leading to successful research grant applications in NWO and ERC schemes, and to other funding bodies. With the help of the Faculty funding officer, more opportunities for grants can be identified and these, in turn, may help reduce the teaching load of staff who are successful in acquiring one or more grants, or aid in funding new PhD positions. The proposed rolling grant scheme for newly appointed assistant professors may also contribute to this, in addition to making the university a more attractive place to work. This also facilitates hiring new excellent staff members with relevant statistical and computational skills.

The improvement of the research infrastructure remains a very important goal for the next period. Within the next six years, lab space plans will be realized through a renovation of the Harmonie building. To be able to use the improved lab facilities successfully, we aim to provide improved support by lab managers/coordinators, as well as access to expertise on statistical, technological, and computational methods. This also includes improved support for research data management and for obtaining ethical clearance for working with participants. We aim to acquire funding for this from the Faculty. Clear foundations are in place: CLCG has been instrumental in starting up subject-based research under COVID-19 restrictions by means of a protocol that is still in use Faculty-wide.

PhD supervision remains important. Our goal is to ensure that at least 70% of our PhD manuscripts are approved within 5 years. Due to the pandemic, this goal may be hard to reach in the short term, since several projects which depend on experimental work with human subjects obviously have encountered some delays.

We will take advantage of the new "Schools" set up by the university to improve facilities for interdisciplinary research, with partners from other faculties.

10.2 To achieve the Societal Aims

CLCG research continues to combine an interest in fundamental scientific aspects with a keen interest in contributing to solving societal problems. We aim to improve the visibility of our research with clear societal impact, by improving traditional press releases, enhancing social media channels and improving our website. We plan to set up more structural connections with our stakeholders (e.g., newsletter, annual event, societal advisor member on CLCG advisory board). We will continue successful activities such as participating in the Arts Festival and in events such as Noorderzon, Lowlands Science and other public outreach events.

Attachment 1: Outflow PhD-cohorts per VSNU-type

Table 12: Outflow PhD-cohorts per VSNU-type

functietype (CLCG)	2011			2012			2013			2014			2015			2016			2017		
	→|	□	☑	→|	□	☑	→|	□	☑	→|	□	☑	→|	□	☑	→|	□	☑	→|	□	☑
1a. Werknemer-promovendus	21	37	5	4	39	2	4	38	5	7	43	1	6	37	12	3	35	5	2	33	4
1b. Promoverend medewerker	0	1	0	0	1	0	0	1	0	1	1	1	0	1	0	0	1	0	0	1	0
2a. Beurspromovendus eigen uni / umc	0	18	3	0	8	10	1	6	3	0	5	0	0	5	0	3	8	0	10	17	1
2b. Beurspromovendus andere beursgever	3	5	1	5	10	0	5	14	1	2	16	0	1	12	4	5	13	4	1	8	5
3. Extern gefinancierde promovendus	1	3	0	2	5	0	3	7	1	3	10	0	3	12	0	2	13	1	3	16	0
4. Buitenpromovendus (eigen middelen)	8	14	2	1	13	2	1	11	3	2	10	2	4	10	3	3	9	2	2	9	1
Onbekend	0	1	0	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Totaal	**33**	**79**	**11**	**12**	**77**	**14**	**14**	**78**	**13**	**15**	**85**	**5**	**14**	**77**	**19**	**16**	**79**	**12**	**18**	**84**	**11**

→\| instroom

□ lopend

☑ gepromoveerd