Department Application Ireland

Bronze Expanded Charter Award

January 2021

CSIS-Lero

University of Limerick

Athena SWAN Bronze Department Award Application (Ireland)

Name of institution	University of Limerick	
Department	Department of Computer Science and Information Systems and Lero – the Science Foundation Ireland Research Centre for Software	
Focus of department	STEMM	
Date of application	30th November 2020	
Award Level	Bronze (Expanded Charter) including PMSS	
Institution Athena SWAN award	Date: April 2019	Level: Bronze (Expanded Charter)
Contact for application Must be based in the department	Prof Ita Richardson	
Email	Ita.richardson@ul.ie	
Telephone	[redacted]	
Departmental website	http://ulsites.ul.ie/csis www.lero.ie	

Word count

Department application – Bronze	Recommended word limits	Actual word counts
Word limit (including 5a, 7, 8, 9)	12,500	12,438
1. Letter of endorsement	500	483
2. Description of the department	500	934
3. Self-assessment process	1,000	1,308
4. Picture of the department	2,000	1,862
5. Supporting and advancing women's careers	6,000	7,831
5a. Including PMSS	500	
6. Case studies	N/A	
7. Further information	500	
8. Inclusion of Research Centre	1,000	
9. COVID-19	500	

Nomenclature

Term Used	Description
CSIS	Department of Computer Science & Information Systems (excluding Lero)
Lero@UL	Lero headquarters at the University of Limerick
CSIS-Lero	CSIS and Lero@UL combined
Lero	Lero, the Science Foundation Ireland Research Centre for Software, the national centre

Glossary

AHSSBL	Arts, Humanities, Social Sciences, Business and Law
AI	Artificial Intelligence
ALECS	Advanced Learning in Evolving Critical Systems (EU grant through which Lero employs Research Fellows)
AP	Associate Professor
AS	Athena SWAN
ASSC	Athena SWAN Steering Committee
AY	Academic Year
BEng	Bachelor of Engineering
BSc	Bachelor of Science
CAO	Central Applications Office
CD	Course Director
CS	Computer Science
CSc	Chief Scientist, Lero
CSIS	Computer Science and Information Systems
CWIT	Connecting Women in Technology
DARE	Disability Access Route to Education
DCU	Dublin City University
DES	Department of Education and Skills
DEIS	Delivering Equality of Opportunity In Schools aimed at lessening educational disadvantage and bringing about social inclusion in primary and second level education
DMARC	Digital Media and Arts Research Centre
EA	Executive Administrator
DnS	Did not specify
EDI	Equality, Diversity and Inclusion
EHS	Education and Health Science
EOM	Education and Outreach Manager, Lero
EPE	Education and Public Engagement
EU	European Union
F	Female
FI	Funded Investigator

FT	Full-time
FYP	Final year project
HDip	Higher Diploma
HEA	Higher Education Authority, Ireland
HEAR	Higher Education Access Route
HEI	Higher Education Institution
HESA	Higher Education Statistics Agency, UK
HoD	Head of Department
HR	Human Resources
HSE	Health Service Executive
ICT	Information & Communications Technology
IDsc	Interdisciplinary
INGENIC	Irish Network for Gender Equality in Computing
IRC	Irish Research Council
L	Lecturer
LAB	Lecturer above the Bar
LBB	Lecturer below the Bar
LCM	Learning Centre Manager
LD	Lero Director
M	Male
MoU	Memorandum of Understanding
MSAC	Mature Student Access Certificate
MSc	Master of Science
MU	Maynooth University
NUIG	National University of Ireland, Galway
OM	Operations Manager
P	Professor
PD	Postdoctoral Researcher
PDEng	Professional Doctorate in Engineering
PDR	Performance and Development Review
PDRs	Performance and Development Reviews
PG	Postgraduate student
PGT	Taught postgraduate student
PGR	Research postgraduate student
PhD	Doctor of Philosophy
PI	Principal investigator
PI Rep	Representative from CSIS-Lero PIs
PMSS	Professional, Managerial and Support Staff
PnS	Prefer not to say
PT	Part-time
RA	Research Assistant

RF	Research Fellow
RGRAC	Research Grant for Returning Academic Carers
RoI	Republic of Ireland
S&E	(Faculty of) Science & Engineering
SALI	Senior Academic Leadership Initiative
SAT	Self-assessment team
SFI	Science Foundation Ireland
SL	Senior Lecturer
SRF	Senior Research Fellow
STEAM	Science, Technology, Engineering, Art and Mathematics
STEM	Science, Technology, Engineering and Mathematics
STEMM	Science, Technology, Engineering, Mathematics and Medicine
TA	Teaching Assistant
TCD	Trinity College Dublin
TU Dublin	Technical University Dublin
TU D/B	Technical University Dublin, Blanchardstown
TU D/C	Technical University Dublin, City Campus
TU D/T	Technical University Dublin, Tallaght
UBT	Unconscious Bias Training
UCC	University College Cork
UCD	University College Dublin
UCLA	University of California, Los Angeles
UG	Undergraduate
UL	University of Limerick
URSB	University Research Strategy Board
VC	Vice-Chair
WAM	Workload allocation model
WiSTEM^{2}D	Women in Science, Technology, Engineering, Mathematics, Manufacturing and Design
WITS	Women in Technology and Science (national organisation)

Contents

For Noting

The Department of Computer Science and Information Systems and Lero – the Science Foundation Research Centre for Software, University of Limerick, have chosen to opt in to the Professional, Managerial and Support Staff: Interim Process. The additional data, analysis and actions relating to Professional, Managerial and Support Staff (PMSS) should be considered as part of the award panel's assessment of whether the application meets the criteria for a Bronze award. Athena SWAN Ireland, Professional, Managerial and Support Staff: Interim Process allows an additional 500 words for this purpose.

The Department of Computer Science and Information Systems is home to the headquarters of Lero – the Science Foundation Ireland Research Centre for Software, a national centre. We were awarded 1,000 additional words (see e-mail below) due to its inclusion in this submission. Initiatives belonging to CSIS-Lero are discussed throughout the submission.

Dear Prof. Richardson,

Thank you for your email. On the basis that the Department of Computer Science includes an SFI research centre within the submitting unit we will grant an additional 1000 words to the submitting unit to address the following additional areas:

Within the application, data for staff and students associated with the Research Centre should be clearly indicated and disaggregated from other staff and students. Where quantitative or qualitative data relating to the Research Centre indicate a gendered issue, departments should reflect on and suggest action in response to these as in other areas covered by the Athena SWAN process.

In addition, departments should include in their application:

- *A description (including graphical illustration where relevant) of the structure of the Research Centre within the department and nationally.*
- *Reflection on how the department contributes to the creation and implementation of Research Centre policies.*
- *Reflection on how the department advocates for and ensures gender equality and good practice in Research Centre policies and practices; including (but not limited to) recruitment, access to facilities and support, outreach, and membership of key committees and boards.*
- *Reflection on how visiting staff and students are accommodated and supported (where relevant).*
- *Any actions arising from the above.*

Departments can address the above requirements throughout the application in relevant sections, or if desired, combined in one section – for example, the description of the department or further information sections. An additional allowance of 1000 words will be provided to departments to accommodate these additional requirements.

Warmest regards,

Victoria
Dr Victoria Brownlee
Head of Athena SWAN Ireland

1 Letter of endorsement from the head of department

Dr Victoria Brownlee
Head of Athena SWAN Ireland
3 Shelbourne Buildings
Crampton Avenue
Shelbourne Road
Ballsbridge
Dublin 4
Ireland
D04 C2Y6

Dear Dr Brownlee,

We are pleased to submit our application for the Athena SWAN Bronze Expanded departmental award, a joint application by the Department of Computer Science and Information Systems (CSIS) and Lero – the Science Foundation Ireland Research Centre at the University of Limerick (UL). We are both fully committed to the principles of Athena SWAN (AS), wholeheartedly endorsing this application and action plan. The information presented (including qualitative and quantitative data) is an honest, accurate and true representation of CSIS-Lero.

Given our commitment to equality, we lobbied internally for the inclusion of professional, managerial and support staff (PMSS) in this submission and we supported the AS chair in her national efforts. We were delighted when Advance-HE extended the Bronze process to include PMSS under Key Transition Points and Career Development.

As is well known, women are significantly underrepresented in computer science and this is reflected in CSIS-Lero – we have 25%F academics, 15%F PhDs and 18%F undergraduates.

As part of our AS work we have already implemented some initiatives, such as increasing our number of female Funded Investigators in Lero by supporting suitably qualified individuals and organising a Junior Certificate event profiling female students. Furthermore, particularly for those on fixed-term contracts, we recognise that career development is an issue, as our recent focus on performance and development reviews (PDRs) has not extended to researchers and teaching assistants (TAs). We will implement this, starting with training courses for all staff and those in line management.

We have both been active participants in the AS process since February 2017 and are absolutely committed to CSIS/Lero engagement with the process. Work done by individual members is recognised within departmental workload. Apart from employing an Education and Outreach Manager and an ICT learning centre manager, whose work includes outreach to potential students and retention of current students, we are committing a budget of €10,000 annually to the AS process. In 2021, we plan to spend this on understanding and actioning why female researchers receive low grant values, running an AS workshop for staff, organising outreach events and presenting workshop scholarships to schoolgirls.

AS has already become integral to CSIS-Lero with individuals alert to gender equality – for example, in research projects and the appointment of visiting speakers and external examiners. Through our self-assessment, the SAT has identified a comprehensive and achievable action plan.

The COVID-19 pandemic has created challenges. It is especially important now to adhere to principles of equality and fairness. CSIS-Lero has held fortnightly meetings to sustain and protect a positive work environment characterised by equality and inclusion.

This application process has greatly benefited CSIS-Lero and underpins our implementation of the principles of equality, diversity and inclusion in all department activities. The AS process has given us the opportunity to discuss and reflect, resulting in our developing new actions, restructuring initiatives and becoming more strategic in our approach to gender equality, all of which are presented throughout this submission.

Yours sincerely,

[redacted]
HoD
Computer Science and Information

[redacted]
Director
Lero – the Science Foundation Ireland Research Centre for Software

Section 1 word count: 483

2 Description of the department

CSIS-Lero, with 72 staff (27F/38%, 45M/62%), is a department within Science & Engineering (S&E), the largest faculty in UL. CSIS staff are responsible for teaching and supporting 726 UG and PG students. Academics in CSIS also conduct research.

Lero – the Science Foundation Ireland Research Centre for Software – a Republic of Ireland (RoI) national centre funded by Science Foundation Ireland (SFI), is headquartered in UL. Lero does not hold independent legal status. Therefore, everyone employed by Lero@UL through Lero funding is a CSIS UL employee. The Lero Director (LD) (M) is a CSIS professor, reporting to both the CSIS HoD (F) and Faculty Dean (M). Eleven other Irish higher education institutions (HEIs) are members of Lero, and everyone employed by Lero in each HEI is an employee of that HEI. Apart from PhD education, Lero has no specific teaching responsibility, but academics who are members of Lero undertake undergraduate and postgraduate teaching in their home departments.

This AS CSIS-Lero submission includes CSIS, and only that part of Lero (Lero@UL) which is in CSIS.

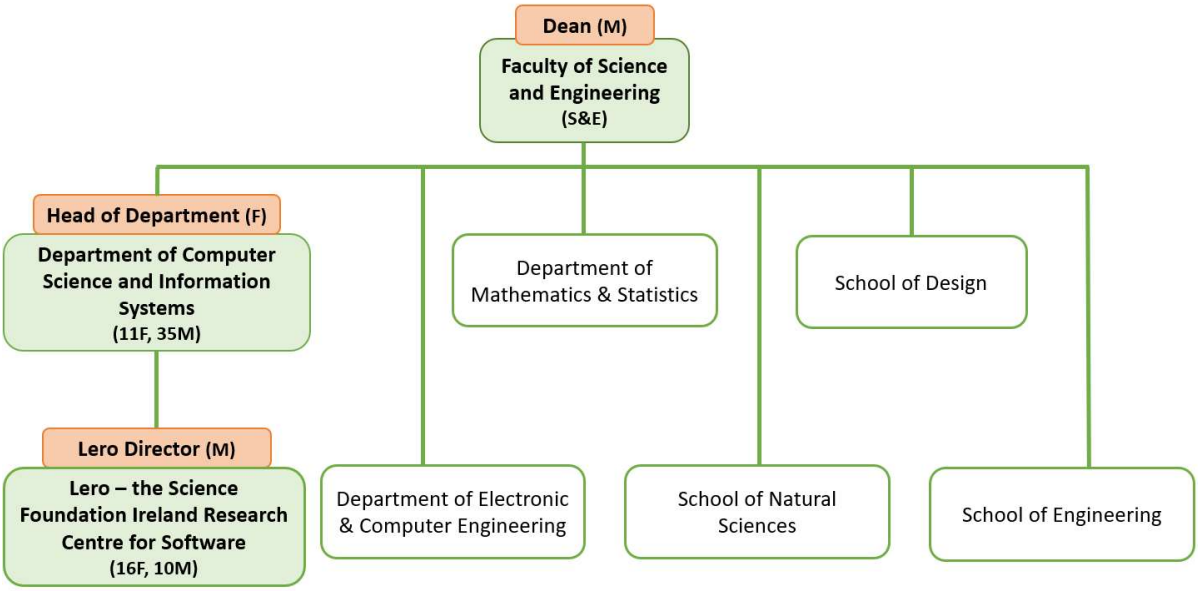

Figure 2.1: The position of CSIS and Lero within S&E

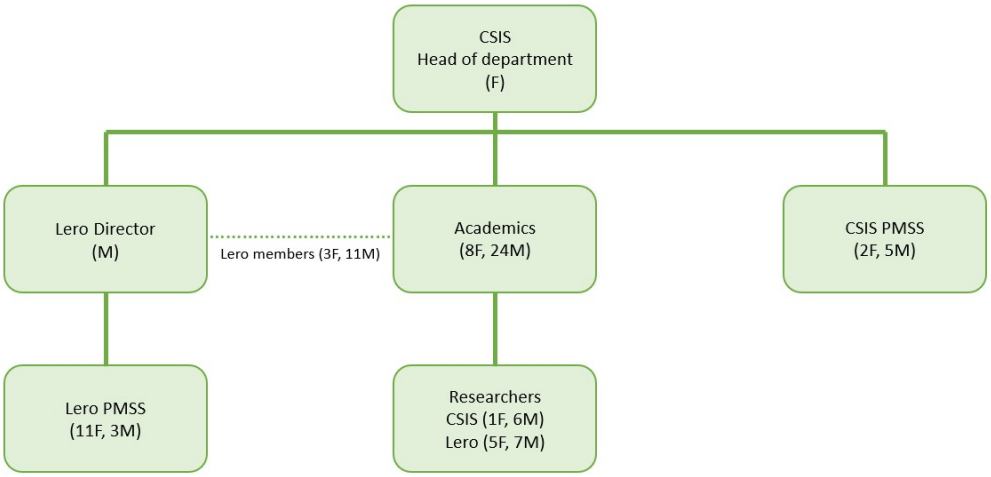

Figure 2.2 CSIS-Lero organisation chart

CSIS-Lero includes academic staff, researchers, PMSS, postgraduates and undergraduates. Academics can apply for Lero membership if they wish, and all (3F, 11M) who have applied for membership were successful. Other CSIS academics have no explicit connection to Lero. In Lero, academic members are either principal investigators (PIs) or funded investigators (FIs). All academic staff teach undergraduate and postgraduate courses and many supervise and lead research projects. PMSS employment contracts are with CSIS in UL, and they are employed exclusively to work within either CSIS or Lero - those in CSIS have UL responsibility only, while those in Lero@UL have responsibility to Lero nationally. Researchers (RFs, SRFs, PDs, RAs) are employed on research contracts in CSIS-Lero and report directly to PI/FIs. CSIS-Lero staff members originate from Ireland, UK, mainland Europe, Africa, North America, South America and Asia.

Table 2.1: Staff numbers, July 2020, disaggregated for CSIS and Lero

	CSIS				Lero@UL			
	F	M	Total	%F	F	M	Total	%F
Academic Staff	8	24	32	25%	0	0	0	NA
Research Staff	1	6	7	14%	5	7	12	42%
Professional, Managerial & Support Staff (PMSS)	2	5	7	29%	11	3	14	79%
Total Staff	11	35	46	24%	16	10	26	62%
Total Permanent Staff	9	25	34	26%	6	2	8	75%
Total Contract Staff	2	10	12	17%	10	8	18	56%
% Permanent Staff	82%	71%		74%	38%	20%		31%
% Contract Staff	18%	29%		26%	62%	80%		69%

The CSIS HoD (F) reports to the Faculty Dean (M) and chairs the CSIS department board, a decision-making board supported by course directors (CDs) and various committees (see Section

5.6.iii). All academics, 14 of whom are Lero members (3F, 11M and 44% of CSIS academics), CSIS PMSS and Lero's General Manager are members of the board.

Lero's Governance Committee (3F, 7M) reports to SFI through the UL President (Figure 2.3) and works with Lero management to ensure that the centre follows Lero's strategy and SFI requirements. The Advisory Board (4F, 6M) provides an informed external perspective on Lero activities. Given the importance of equality and diversity within Lero, during 2019, Prof Yvonne Galligan, Director, Equality, Diversity and Inclusion (EDI), TU Dublin, was appointed to the Lero Advisory Board. The Executive Committee (4F, 12M), with representation from all partner institutions, has overall management responsibility for Lero. To ensure that CSIS is integral to the development of Lero policies, five CSIS academics (4P,3M,1F/1AP,F) are members of the Lero Executive Committee. Lero is managed by the Lero Director (M), supported by a Chief Scientist (M) and a General Manager (M), all of whom also report to CSIS HoD (F).

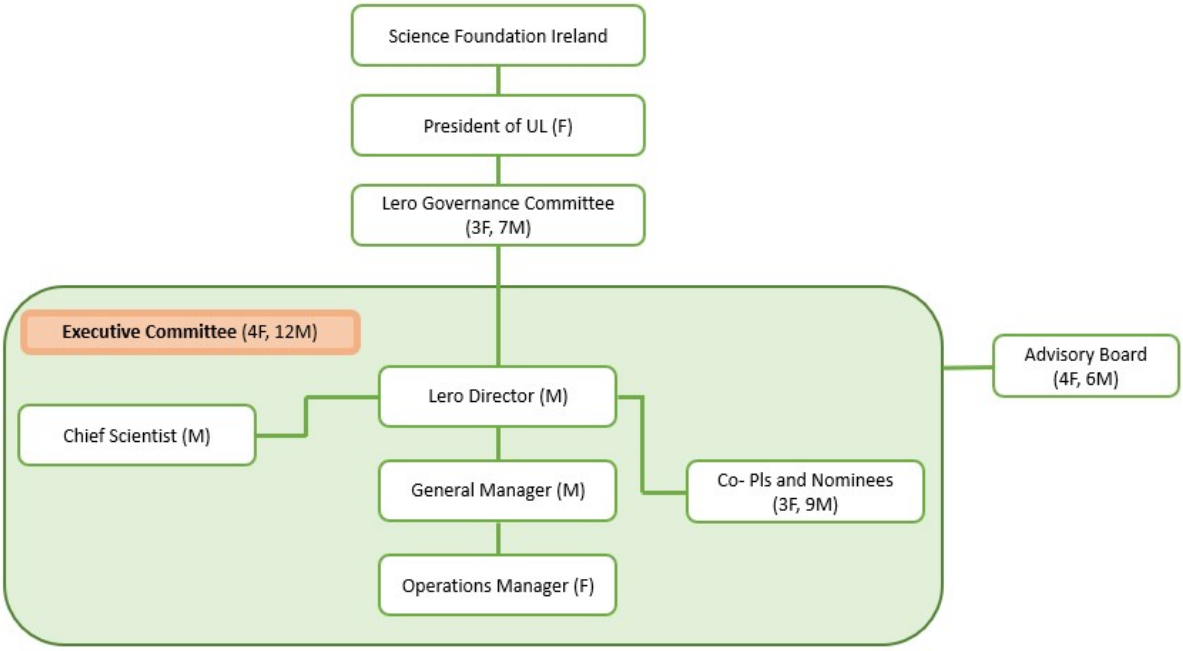

Figure 2.3: Lero Governance Structure

CSIS HoD recruitment is held every five years, as per the UL recruitment process. It is advertised internally in UL by the Faculty Dean, and interviews are held. Positions such as CD are appointed by the HoD for a period of 2-5 years. LD recruitment is linked to an externally advertised position.

Since 1999, CSIS occupies the Computer Science (CS) Building. All CSIS researchers and PMSS are located here, as are 27 (6F, 21M) CSIS academics. It is adjacent to the Tierney Building where Lero@UL has been located since 2012. All Lero@UL researchers and PMSS are located in this building, as are 5 (2F, 3M) CSIS academics. CSIS and Lero use both buildings. For example, CSIS uses Tierney Building meeting rooms when final-year project (FYP) students are making their interim presentations, and Lero uses the CS building for industry events.

Photograph redacted

Lero industry day in the Computer Science Building

CSIS academics contribute to five research groups apart from Lero:

- Biocomputing and Developmental Systems Group
- Localisation Research Centre
- Interaction Design Centre
- Digital Media and Arts Research Centre
- Big Data and Analytics Research Group

Additionally, CSIS academics are members of other institutes such as CONFIRM – SFI Smart Manufacturing Centre – and UL's Health Research Institute. Membership is self-selected by CSIS academics, and there is no requirement to be part of any group. There are currently 41 full-time PhD research students (5F – 12%, 36M – 88%) in CSIS-Lero. We are concerned at the low number of women.

Until early 2020, CSIS-Lero regularly hosted visiting staff and students, but such visits have been cancelled due to COVID-19. Visitors are assigned a contact person, who arranges introductions with other researchers and academics, ensuring participation in research and teaching and awareness of social events.

Table 2.2: Summary of undergraduate and postgraduate courses taught by CSIS

Course level	Mode	No of Courses
Undergraduate	Full-time (1st year only)	2
Undergraduate	Full-time (2nd-4th year only)	4
Postgraduate MSc	Full-time	7
Postgraduate Higher Diploma	Full-time	2
Postgraduate Higher Diploma	Part-time	2

Table 2.3: 2020-2021 student numbers across all years and courses

Student level	F	M	% F
UG	95	444	18%
PGT	79	150	34%
PGR	5	36	12%

CSIS runs 17 taught academic courses to 539 UGs (95F/444M, 18%F) and 229 PGs (79F/150M, 34%F). Enrolling either through the CAO based on Leaving Certificate results or through access routes, UGs do a common first year in one of two courses and then choose to study one of five courses, four of which are in CSIS. Students apply through the internal UL system for each of eleven PG courses. These applications are reviewed by CDs who make offers based on qualifications. We do not run any Foundation courses.

Table 2.4: First year UG enrolments through CAO and access routes (MSAC - Mature Student Access Certificate /DARE - Disability Access Route to Education /HEAR - Higher Education Access Route)

1st years	CAO: Central Applications Office		Access: MSAC/DARE/HEAR	
2017-2018	165	76%	39	24%
2018-2019	138	75%	34	25%
2019-2020	151	62%	51	34%

We are also proud of our graduates, [redacted]

Photograph redacted

[redacted]

The structure and management of CSIS-Lero ensures that gender initiatives, policies, decisions and actions are shared across CSIS and Lero.

Section 2 word count: 934

3 The self-assessment process

(i) A description of the self-assessment team

CSIS-Lero's first AS SAT, comprising 14 members (50%F), was formed in February 2017. At a full departmental meeting, the Chair, HoD (both F) and LD (M) sought expressions of interest in joining the SAT from both CSIS and Lero@UL. Following an unsuccessful application for a pre-May 2015 AS award in 2018, an expanded SAT with revised membership was established in July 2019, with a decision to apply for the Bronze expanded charter (including PMSS) in November 2020. Following a presentation at a CSIS-Lero meeting, members were invited, via e-mail, to join the SAT. We contacted students through discussion in class and via e-mail, and one UG and one PG (2F), both of whom are interested in promoting equality, volunteered to join the SAT. The UG student replaced a male UG member who has now graduated. The new SAT comprises 18 members (10F, 8M), including eight members of the first SAT. Membership includes four PMSS (3F, 1M), three researchers (2F, 1M), five academics who are Lero members (2F, 3M), and five non-Lero academics (2F, 3M). [redacted]

While we recognise that there are more women on the SAT than men, in other ways the SAT reflects diversity across academics, researchers and PMSS through a wide range of knowledge, experience and career stage (Table 3.1). Additionally, the varying work-life responsibilities and commitments of the SAT members add a range of perspectives (Table 3.2). Members shared responsibility for this CSIS-Lero AS submission.

Table 3.1: CSIS-Lero SAT members

Table of members redacted

Table 3.2: CSIS-Lero SAT member personal responsibilities and interests

Personal responsibilities and interests	SAT members
Current child-caring responsibility	6
Prior child-caring responsibility	7
Caring for or have cared for elderly or disabled relative	7
Successfully applied for progression or promotion	3
Unsuccessfully applied for progression or promotion	3
Applied both successfully and unsuccessfully for progression or promotion	6
Moved to Ireland from abroad on their own	2
Moved to Ireland from abroad with family	2
Moved to Ireland from abroad to join family	1
Irish SAT members (of which 2 have received citizenship recently)	13
Involvement in equality of opportunity (women, youth, minorities, LGBTQ communities and human rights	7

The CSIS-Lero SAT is within the Faculty of Science and Engineering (S&E) SAT.

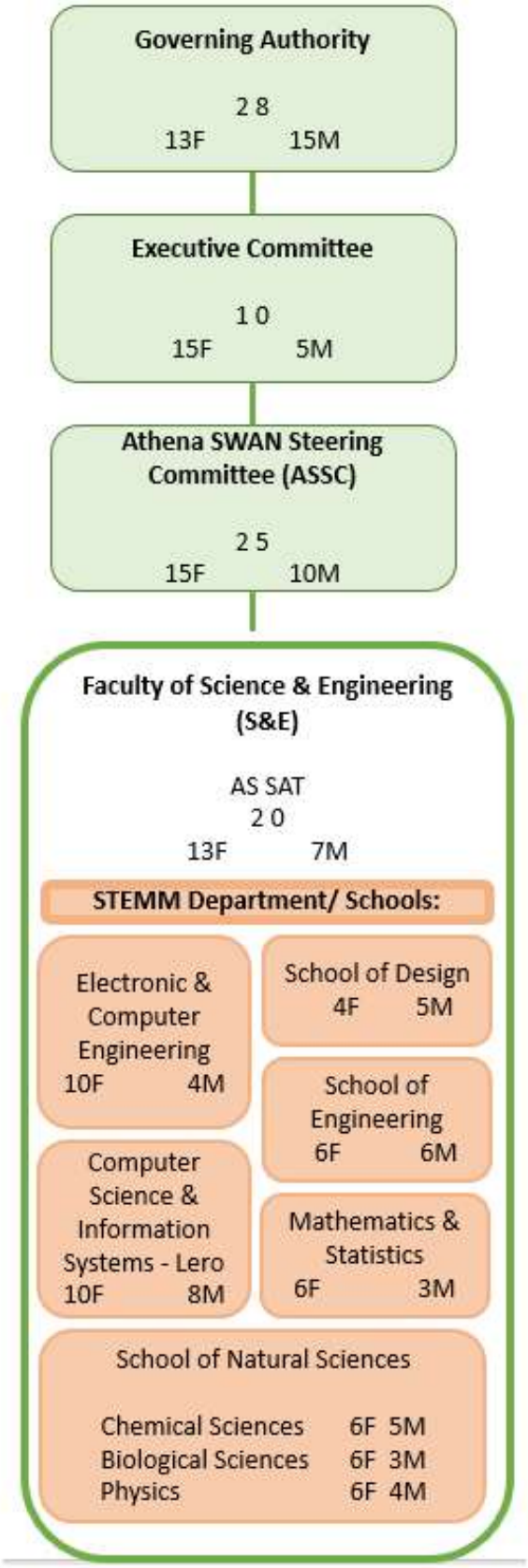

Figure 3.1: Governance and oversight of the departmental SATs in UL/Faculty of Science and Engineering

CSIS-Lero is represented by SAT Chair (F) on the S&E faculty AS SAT, chaired by the Faculty Dean. She reports on AS progress and highlights issues that require faculty and institutional support. A quarterly report is sent from the S&E SAT to the UL AS Steering Committee (ASSC), chaired by the President. The Chair reports back to the CSIS-Lero SAT on outcomes and discussions at institutional and faculty levels. Updates are communicated to staff at every CSIS-Lero departmental meeting where AS is a standing agenda item.

(ii) An account of the self-assessment process

Through the AS SAT Chair, LD and HoD, CSIS-Lero began implementing actions identified in our unsuccessful November 2018 AS submission – for example, PDR training was held for CSIS members in February 2019 and an EDI representative was appointed to the Lero Advisory Board. In November 2019, this group met with the UL Head of Equality and Diversity seeking advice and guidance on the application process. A reformed CSIS-Lero AS SAT held its first meeting in February 2020 and has met every fortnight thereafter. Six subgroups were established, each focusing on specific sections of the submission. SAT meetings focused on sub-group progress - staff data, student data, survey analysis, focus group analysis, identification of areas for improvement and action plan development. A dedicated SAT SharePoint portal was used for sharing supporting documentation, data and draft sections.

We discussed regularly the inclusion of PMSS, who are vital to the smooth running of CSIS-Lero. We actively sought for PMSS to be included in the Bronze Expanded Charter application, lobbying both within UL and nationally, as we believe that we cannot have true equality unless all staff are treated equally, regardless of their gender and job title. We are delighted to be able to include reflection and actions which affect all our staff in this application.

Given our structure, we felt it was important to understand issues by staff category:

- All academics, some of whom do their research in Lero@UL (Lero members), are permanent or on tenure track;
- All researchers are on contract;
- Six out of 18 CSIS-Lero PMSS are on contract within Lero@UL.

Attitudinal surveys were distributed electronically to all staff throughout May 2020, with separate surveys for each staff category, allowing tailoring of a subset of questions in each case. We had 83% survey participation (Table 3.3). Given that detailed responses may identify individuals, the responses from the participant who identified as non-binary and the two participants who did not state their gender are not disaggregated in the report.

Table 3.3: Staff survey (May 2020) participation and response rates

Staff category	Reponses					Total surveyed	Response Rate
	F	M	Non-binary /other	Total	% F		
Academic	6	25	1	32	19%	32	100%
Research	4	9	1	14	29%	19	74%
PMSS	6	5	1	12	50%	19	63%
Total	16	39	3	58	28%	70	83%

We held focus groups and interviews with staff and students. As well as having a gender-mix in our groups, students were selected based on ethnic background, year and area of study. They

were contacted in person and by email, by the CD or an academic. Discussions focused around opinions on gender balance, role models, departmental supports and career decisions.

Table 3.4: Participation in other CSIS-Lero Athena SWAN data collection activities

Data collection activity	Persons involved	Participants
Focus group	CSIS academics and PMSS	8F, 9M
Focus group	CSIS-Lero PMSS	8F, 2M
Focus groups	4th year and taught postgraduate students	4F, 5M
Focus groups	Taught MSc students	4F, 6M
Focus groups	Researchers	3F, 7M
Individual interviews	CSIS teaching assistants (TAs)	1F, 2M
Individual interviews	PhD students	4F, 4M
Individual interviews	Undergraduate students	8F, 5M, 2DnS, including 5F 1st year students
Individual interviews	Graduated students	2F PhD, 3F BSc

Other data analysed included:

- CSIS-Lero student and HR data;
- Research papers presented at the *International Conference on Software Engineering (ICSE)* and workshop on *Gender Equality in Software Engineering,* analysed by CSIS-Lero faculty and researchers (6F, 5M);
- Fifteen CSIS course review documents which include student, staff and external examiner feedback;
- Statistics and reports from CSIS-Lero, UL and external sources, including HEA (Ireland) and HESA (UK) data.

SAT activities were informed by:

- AS guideline documentation;
- Reflection on our unsuccessful application and feedback received;
- Collaboration with institution-level AS committees (Figure 2.1), the UL Head of Equality and Diversity and other UL AS champions;
- Attendance by committee members at UL and national AS Network meetings and events, and at Advance HE training courses;
- Benchmarking (internal): consultation with university departments, both successful and unsuccessful,l in attaining an AS Bronze award;
- Benchmarking (external): consultation with SAT chair from School of Electrical Engineering, Electronics and Computer Science at University of Liverpool, whose Department of CS is of similar size to CSIS (academics 9F, 30M, and researchers 6F, 15M). They renewed their AS Bronze award in 2019;
- Benchmarking (external): comparison with HEA figures for Information and Communications Technologies, Software Application Development and Analysis, and Database and Network Design and Administration courses, and with HESA Computer Science, where comparable courses to those in CSIS are recorded. HEA data is available only up to 2018/2019.

- National/international learning and benchmarking: CSIS-Lero academics/researchers have attended events such as Building the UK Women into Computer Science Experience run by Council of Professors and Heads of Computing (CPHC) 2020; been panellists on Women in Technology, IEEE World of Wireless, Mobile and Multimedia Networks (WOWMOM) 2020; attended workshops on Software Developer Diversity and Inclusion (SDDI) 2019 and 2020, IEEE World Forum on Internet of Things, Women in Engineering Program, 2019 and session on *Woman-Centred Design* and *Design Research and Feminism* at the Design Research Symposium 2018.

Data collected during these events has been analysed and included in this submission. The submission was reviewed within UL by two people with experience in submitting and reviewing applications and the EDI HR manager, and by an external reviewer.

Both CSIS and Lero websites actively promote AS.

(iii) Plans for the future of the self-assessment team

Future activities for the SAT are as follows:

- Write and approve AS CSIS-Lero SAT terms of reference, to include a review of SAT membership every two years, appointment of a new chair and vice-chair in 2021, and targeting an increase in male representation (**Action 1.1**).
- Oversee and drive the implementation of the action plan and establish formal annual action plan reviews (**Action 1.2**). Progress will be communicated to S&E SAT and to department meetings.
- Provide resources to implement the action plan, including an annual budget of €10,000 and inclusion of AS contribution in the CSIS work allocation model (WAM) (**Action 1.3**).
- Host an AS action plan implementation workshop in February 2021 for all CSIS-Lero members (**Action 1.4**).
- Run biennial staff equality, diversity and inclusion surveys and student focus group studies (**Actions 1.5, 1.6**).

Goal 1: Continue to embed Athena SWAN in CSIS-Lero.

- **Action 1.1:** Write and approve AS CSIS-Lero SAT terms of reference.
- **Action 1.2:** Establish a formal annual review of the AS action plan.
- **Action 1.3:** Ensure that adequate resources are available to successfully implement the action plan.
- **Action 1.4:** Host an Athena SWAN action plan implementation workshop.
- **Action 1.5:** Undertake a staff gender equality, diversity and inclusion survey every two years.
- **Action 1.6:** Conduct (taught and research) student focus groups every two years.

Section 3 word count: 1,308

4 A picture of the department

4.1 Student data

(i) Numbers of men and women on access or foundation courses

N/A

(ii) Numbers of undergraduate students by gender

All UG programmes are full-time. Programme numbers are sufficiently high to render UG gender analysis on a percentage basis genuinely meaningful.

Table 4.1.1: Undergraduate courses in CSIS, academic year 2020-2021

Mode	Code	Years	Course title
FT	LM121	1 only	BSc in Computing Technologies (Common Entry) – feeding into CSIS courses LM051 or LM110 or a third non-CSIS course in Year 2
FT	LM110	2, 3, 4	BSc in Computer Games Development (enrolment through Common Entry)
FT	LM051	2, 3, 4	BSc in Computer Systems (enrolment through Common Entry)
FT	LM122	1 only	BSc in Creative Media and Interaction Design (Common Entry) from 2017-2018 – feeding into CSIS courses LM113 or LM114 in Year 2
FT	LM113	2, 3, 4	BSc in Digital Media Design (enrolment through Common Entry)
FT	LM114	2, 3, 4	BSc in Music, Media and Performance Technology (enrolment through Common Entry)

Table 4.1.2: Students enrolled in CSIS undergraduate courses AY 2020-2021 (LM121 feeding into LM110/LM051, and LM122 feeding into LM113/LM114)

	F	M	Total	%F
LM121 Year 1	14	114	128	11%
LM110 Year 2, 3, 4	10	92	102	10%
LM051 Year 2, 3, 4	17	129	146	12%
Total	**41**	**335**	**376**	**11%**
% of CSIS total	46%	73%	68%	
LM122 Year 1	24	44	68	35%
LM113 Year 2, 3, 4	24	39	63	38%
LM114 Year 2, 3, 4	15	41	56	27%
Total	**63**	**124**	**187**	**34%**
% of CSIS total	54%	27%	31%	
Total UG	**104**	**459**	**563**	**18%**

- The majority of CSIS students are enrolled on CS courses; female representation is 11%.

- While numbers enrolled on the interdisciplinary courses are smaller than for CS courses, there is higher female representation: 34%.
- In CSIS UG courses, 18% are women.

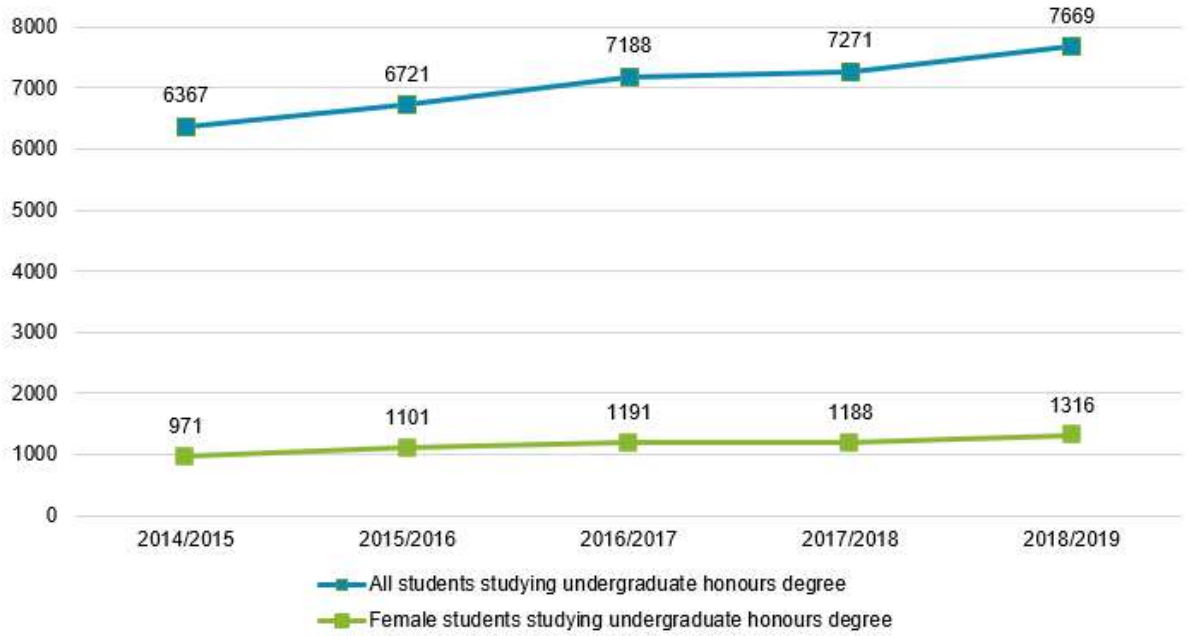

Figure 4.1.1: Detailed 5-year category trend for all students and female students studying undergraduate honours degrees in Information and Communications Technologies, Software Application Development and Analysis, and Database and Network Design and Administration at Irish universities (HEA statistics available only up to 2018/2019)

CSIS %F UG students in 2018-2019 (25%) is higher than national figures, where women account for 17% of ICT students (up from 15% in 2014-2015). In our case, the trend has been variable, with a decrease between 2018-2019 and an increase of over 100% between 2019-2020 and 2020-2021, enrolment going from 18 to 38. To continue this trend, we will continue to host a strong outreach programme (See Section 5.6.viii).

Table 4.1.3: First year enrolments by F/M coming through CAO (2 courses)

2018-2019	F	M	Total	%F
LM121 BSc in Computer Science	17	82	99	17%
LM122 BSc in Creative Media and Interactive Design	17	22	39	44%
Total	**34**	**104**	**138**	**25%**
2019-2020				
LM121 BSc in Computer Science	10	100	110	9%
LM122 BSc in Creative Media and Interactive Design	8	33	41	20%
Total	**18**	**133**	**151**	**12%**
2020-2021				
LM121 BSc in Computer Science	14	114	128	11%
LM122 BSc in Creative Media and Interactive Design	24	44	68	35%
Total	**38**	**158**	**196**	**19%**
Totals 2018-2021				
LM121 BSc in Computer Science	41	296	337	12%
LM122 BSc in Creative Media and Interactive Design	49	99	148	33%
Total	**90**	**395**	**485**	**19%**

During three academic years – 2018-2019 to 2020-2021:

- The overall intake of women on CSIS courses varied between 12% and 25%.
- Female intake to CSIS fell from 17% to 11% although numbers increased from 99 to 128.
- On average, the interdisciplinary STEAM course, LM122, had 33%F intake although representation varied between 20% and 44% by year.

CSIS accepts students from the following groups:

- MSAC: one-year full-time pre-degree course run for mature students prior to application to a degree course;
- DARE: process that provides for students with disabilities to come to college on a reduced points basis;
- HEAR: third-level admissions scheme for school leavers from disadvantaged socioeconomic backgrounds.

Table 4.1.4: First year enrolments to CSIS by F/M coming through MSAC/DARE/HEAR routes

		MSAC	DARE	HEAR	Total
2017-2018	F	1	1	3	5
	M	13	8	13	34
	%F	7%	11%	19%	13%
2018-2019	F	1	1	0	2
	M	4	7	21	32
	%F	20%	13%	0%	6%
2019-2020	F	2	3	0	5
	M	17	8	21	46
	%F	11%	27%	0%	10%

While these routes have accounted for over 24% of enrolments into CSIS courses, only 12 (10%) were women. We have not strategically targeted these potential female candidates, but plan to do so (**Action 2.1**).

Over the past three years, female student numbers on UL's interdisciplinary BEng - Biomedical Engineering (30%F) are significantly higher than on UL's non-interdisciplinary BEng - Mechanical Engineering (15%F). From INGENIC (Irish Network for Gender Equality in Computing), we know that in RoI HEIs female enrolment on interdisciplinary courses averaged 37% in 2017-2018; initial 2020-2021 figures indicate that Computing courses with other topics, such as languages, business and psychology, are enrolling approximately 50%F students. Given this evidence, we will actively investigate the introduction of another interdisciplinary UG course (**Action 2.2**).

Table 4.1.5: Degree attainments by gender for CSIS undergraduate courses

Table redacted.

Table 4.1.6: Degree attainments by gender for CSIS undergraduate courses from 2017/2018 to 2019/2020, split into CS and interdisciplinary courses

Table redacted.

Figure 4.1.2: Degree attainments for CS undergraduate courses by gender, 2017-2018 to 2019-2020 combined

Figure redacted.

Figure 4.1.3: Degree attainments by gender for interdisciplinary undergraduate courses by gender, 2017-2018 to 2019-2020 combined

Figure redacted.

The data indicate that:

- Female students are more likely to receive a higher level of award (H1/H2:1) than male students.
- In CS, over the last three years, although no women gained H1 awards, they were still more likely to gain a higher-level award than men.
- In interdisciplinary courses, over the last three years, 91%F gained higher-level awards compared to 59%M.

Through **Action 2.3**, we will investigate and action these gender discrepancies.

Goal 2: Increase the number of female students on CSIS courses.

- **Action 2.1**: Implement promotion of CSIS undergraduate courses to women in MSAC/DARE/HEAR groups.
- **Action 2.2**: Investigate the introduction of a new interdisciplinary course in CSIS.
- **Action 2.3**: Investigate why women perform better than men in UG courses and take action to improve the degree outcome of men.

(iii) Numbers of men and women on postgraduate taught degrees

Table 4.1.7: Postgraduate taught courses in CSIS, academic year 2020-2021

Level	Mode	Code	Course title
PG	FT & PT	LM637/ LM716	Higher Diploma in Data Analytics and Software Development
PG	FT & PT	LM710/ LM715	Higher Diploma in Software Development
PG	FT & PT	LM338	MSc in Software Engineering
PG	PT	LM719	MSc in Artificial Intelligence (started in 2020)
PG	FT students working in healthcare	LM635	MSc in Health Informatics
PG	FT	LM803	MA/MSc in Art and Technology
PG	FT	LM805	MSc in Software Development: International Systems
PG	FT	LM807	MA/MSc in Interaction and Experience Design
PG	FT students working in healthcare	LM808	MSc in Digital Health Transformation (started in 2020)

Table 4.1.8: Applications, offers and acceptances on taught MSc courses (note: LM719 and LM808 commenced in 2020)

Table redacted.

Table 4.1.9: Offers as % of applications, and acceptances as % of offers on taught MSc courses

Table redacted.

- The proportion of female applicants varies by course and year.

- Offer rates vary yearly but, overall, women are slightly more likely than men to receive offers.
- Patterns of acceptance rates also vary yearly with no clear gendered patterns apparent.

There is no evidence of females being disenfranchised in the application-offer-acceptance process. The increased enrolment of women on LM338 (42% in 2020) is testament to the impact of our international recruitment drive where female lecturers travelled with UL's International Education Division to promote this course. [redacted]

Table 4.1.10 Numbers of students enrolled on CSIS postgraduate courses 2020/2021

Course code	Course title	F	M	Total	%F
LM338	MSc in Software Engineering	10	14	24	42%
LM719	MSc in Artificial Intelligence	5	71	76	7%
LM710/ LM715	Higher Diploma in Software Development	3	8	11	27%
LM637/ LM716	Higher Diploma in Data Analytics and Software Development	2	6	8	25%
	Total students on PG computer science courses	**20**	**99**	**119**	**17%**
LM635	MSc in Health Informatics	21	11	32	66%
LM803	MA/MSc in Art and Technology	1	4	5	20%
LM805	MSc in Software Development – International Systems	2	5	7	29%
LM807	MA/MSc in Interaction Design and Experience	3	13	16	19%
LM808	MSc in Digital Health Transformation	32	18	50	64%
	Total students on PG interdisciplinary courses	**59**	**51**	**110**	**54%**
	Total taught PG students	**79**	**150**	**229**	**34%**

Note: This includes students who have not graduated after one year, due, for example, to illness at exam time, and who take modules during a second year.

- In line with patterns at UG level, higher proportions of women are studying interdisciplinary courses, which include healthcare and STEAM courses run by CSIS.
- Generally, female representation on PGT courses is better than on UG courses:
  - A higher %F of international students apply for the MSc in Software Engineering.
  - Our two health-based MSc programmes attract higher cohorts of women.
- The %F on LM719 is particularly low. As AI is a high growth CS area, we will implement **Action 2.4**.

Goal 2: Increase the number of female students on CSIS courses.

- **Action 2.4**: Develop promotional materials targeting women to consider registering for the MSc in Artificial Intelligence.

(iv) Numbers of men and women on postgraduate research degrees

Postgraduate research degrees offered in CSIS are mainly PhDs, although we have MSc students occasionally (currently one F). Comprehensive data on application/offer/acceptance rates are not available as supervisor and prospective research student interactions are undertaken on an individual supervisor basis. Within this constraint, we will establish the collection of these statistics (**Action 3.1**).

Ninety percent of students are funded by research grants, some through Lero, and F/M are equally likely to be funded. PhD students can register any time during the year, with two graduations annually. Two males recorded non-completion in the past three years. Fifty percent of PhD students are international.

Table 4.1.11: PhD students registered in CSIS

July 2018	F	M	Total	%F
CSIS	2	5	7	28%
Lero@UL	6	28	34	17%
Total July 2018	**8**	**33**	**41**	**19%**
July 2019				
CSIS	4	14	18	22%
Lero@UL	4	22	26	15%
Total July 2019	**8**	**36**	**44**	**18%**
July 2020				
CSIS	5	17	22	23%
Lero@UL	1	18	19	5%
Total July 2020	**6**	**35**	**41**	**15%**

Numbers shown are for July each year, as PhD students can graduate at any of four annual boards. All students are registered in CSIS, with some funded through Lero@UL.

- As the overall number of Lero@UL PhD students has fallen, the %F decrease is greater than the %M decrease.
- Although, CSIS PhD numbers increased in CSIS, %F fell from 28% to 23%.
- The overall change was relatively small but %F representation decreased 19% to 15%. This is slightly lower than in the US, for example, where 20% of Computer and Information System PhDs are women.

Table 4.1.12: International PhD students registered in CSIS – July 2020

July 2020		F	M	Total	%F
CSIS	EU	2	10	12	17%
	Non-EU	3	7	10	30%
	Total	**5**	**17**	**22**	**23%**
Lero@UL	EU	1	12	13	8%
	Non-EU	0	6	6	0%
	Total	**1**	**18**	**19**	**5%**
Total	**EU**	**3**	**22**	**25**	**12%**
	Non-EU	**3**	**13**	**16**	**19%**
	Total	**6**	**35**	**41**	**15%**

The current Lero grant round finishes in 2020. New recruitment will start in 2021.

Table 4.1.13: PhD Enrolments in Irish universities in Information and Communications Technologies, Software Application Development and Analysis, and Database and Network Design and Administration, 2018-2019 (HEA statistics)

PhD Enrolments 2018-2019	F	M	Total	%F
University of Limerick	9	37	46	20%
Dublin City University	21	33	54	39%
Maynooth University	8	17	25	32%
Trinity College Dublin	35	57	92	38%
University College Cork	4	8	12	33%
University College Dublin	30	74	104	29%
Total	**107**	**226**	**333**	**32%**

In comparison to RoI HEA figures, the UL %F PhD enrolment in our field is lower than in other universities. When Lero recruitment due to grant renewal re-commences in 2021, we will implement **Action 3.2**.

Goal 3: Increase the number of registered female PhD students in CSIS-Lero.

- **Action 3.1**: Establish collection of application/offer/acceptance rates for PhD students.
- **Action 3.2**: Target women to apply for PhD positions.

(v) Progression pipeline between undergraduate and postgraduate student levels

Trends in our field between 2017-2018 and 2018-2019 show an increase, +11, nationally in females enrolling for PhD.

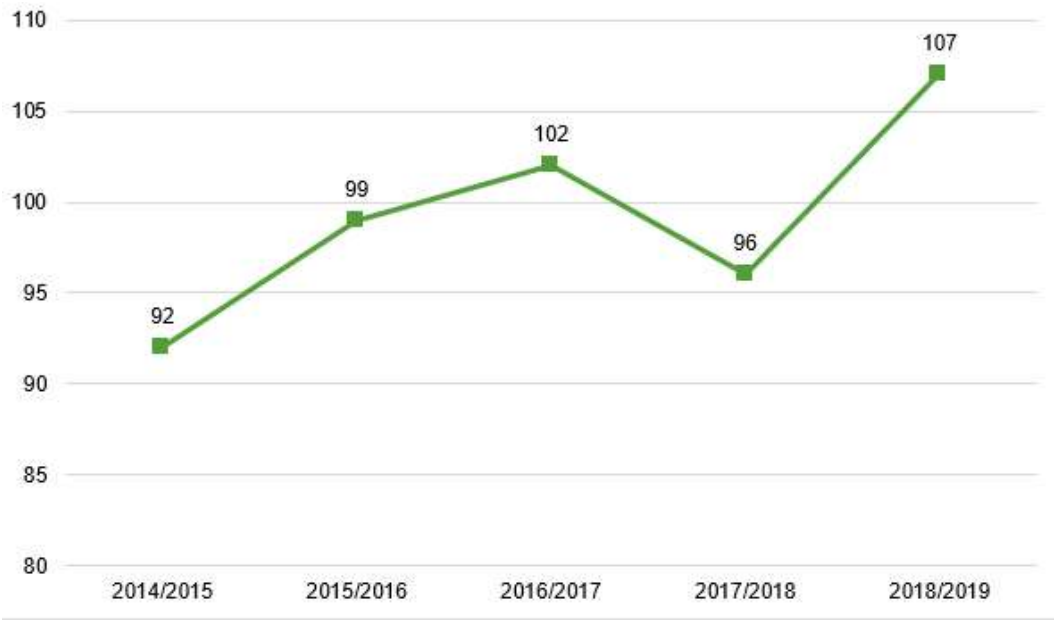

Figure 4.1.4: Female PhD enrolments in Information and Communications Technologies, Software Application Development and Analysis, and Database and Network Design and Administration at Irish universities, 2014-2015 to 2018-2019 (HEA statistics)

[redacted] During student focus groups, we established that most women who commenced PhD study were either encouraged individually to consider a PhD or had been given an opportunity to do research work as an undergraduate.

> *"My supervisor approached me twice and asked whether I wanted to continue from my undergrad FYP. Initially I had only considered doing a masters but he managed to persuade me to aim for the stars instead of the treetops!"*

We will implement **Actions 3.3, 3.4**.

Goal 3: Increase the number of registered female PhD students in CSIS-Lero.

- **Action 3.3**: Target female 4th year and MSc students individually regarding PhD opportunities in CSIS-Lero.
- **Action 3.4**: Present female 3rd year students with bursary opportunities in CSIS-Lero.

CSIS-Lero also runs a PDEng, jointly-directed by 1F and 1M, where the research project requires a contribution to professional practice or solving a significant organisational problem, typically based in the candidate's work environment. Because of our AS activity, we promoted the course particularly to women, ensuring, for example, that they had an opportunity to meet with other women who had completed PhDs as mature students. Of the 12 candidates registered to date, five are female (42%).

4.2 Academic, research and PMS staff data

Table 4.2.1: All CSIS-Lero staff by gender, 2018 to July 2020

	2018			2019			2020		
	F	M	%F	F	M	%F	F	M	%F
[redacted]									
Total Academic Staff	10	25	29%	8	28	22%	**8**	**24**	**25%**
[redacted]									
Total Research Staff	5	12	29%	4	12	25%	**6**	**13**	**32%**
[redacted]									
Total PMS Staff	10	10	50%	12	8	60%	**13**	**8**	**62%**
Overall Total	25	47	35%	24	48	33%	**27**	**45**	**38%**

Table 4.2.2: Total staff, disaggregated for CSIS and Lero@UL, by gender, July 2020 (Total: 27F, 45M, 38%F)

	CSIS				Lero@UL			
	F	M	Total	%F	F	M	Total	%F
Total staff in CSIS and Lero	11	35	46	24%	16	10	26	62%

(i) Academic staff (research-only, teaching and research, or teaching-only), research and PMS staff by grade, contract function and gender

Academic staff

All academic staff are affiliated to CSIS. Apart from TAs, CSIS academic positions are "teaching and research" positions. TAs are 10-month contract positions. UL stipulates that an individual cannot hold this position more than twice.

Table 4.2.3: CSIS academic staff data by gender, 2018 to 2020

Table redacted.

Between 2018 and 2020, the proportion of female staff fell from 29% to 25% (Table 4.2.3). Looking specifically at CS (Irish figures not disaggregated by discipline), the proportion of female staff is higher than HESA-UK (20.9%, 2019) and international figures (20% CS professionals are female).

With small numbers of women, it is difficult to draw firm conclusions about female representation by grade. Nonetheless, there is a clear gap at SL level which we need to address.

Progression to/within academic positions is through open advertising or by promotion (Table 4.2.4). SL/P positions are rarely advertised [redacted]

Table 4.2.4: Recruitment process to academic positions

Position	How position is filled	Potential applicants	Notes
Lecturer below the Bar	Advertisement	PD, RF, external applicants	Unlikely, but possible, that SRF would apply
Lecturer above the Bar	Progression	LBB	
Lecturer above the Bar	Advertisement	LBB, PD, RF, SRF, external applicants	Unlikely, but possible, that PD would get this position
Senior Lecturer	Promotion	LAB	
Senior Lecturer	Advertisement	LAB, RF, SRF, external applicants	Unlikely, but possible that RF would get this position
Associate Professor	Promotion	SL	
Associate Professor	Advertisement	SL, SRF, External Applicants	
Professor	Advertisement	SL, AP, SRF, External applicants	Unlikely, but possible, that SL would get this position
Professor	Promotion	AP	

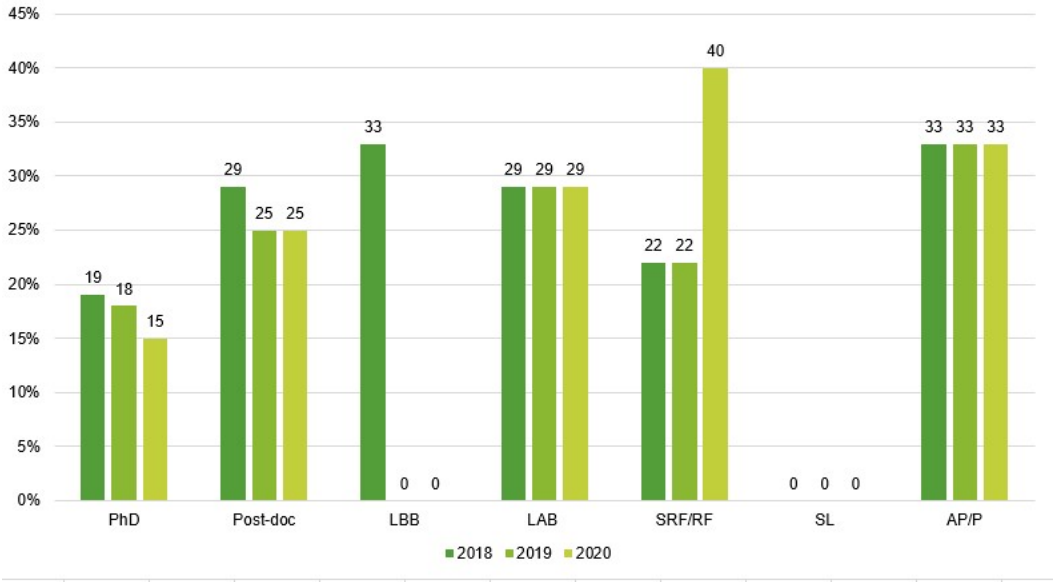

Figure 4.2.1: Pipeline of female CSIS academic staff by grade, 2018 to 2020

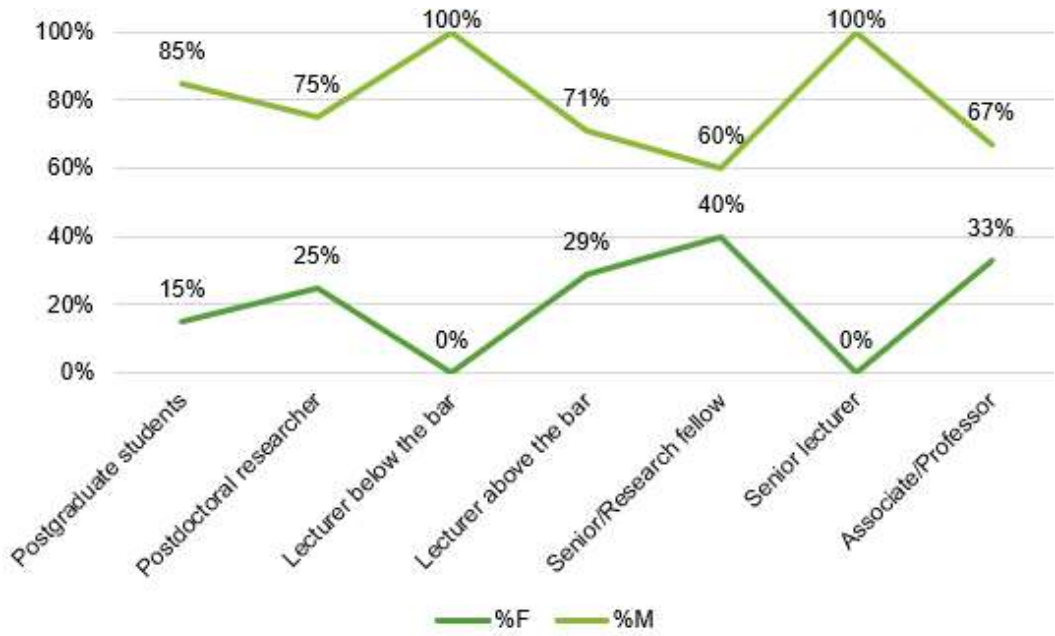

Figure 4.2.2 – 2020 Academic career progression pipeline. For the purposes of the graph, as numbers are small, Associate Professor (1F) and Professor (1F, 4M) are shown as one figure.

Regarding the pipeline (Figures 4.2.1/4.2.2):

- In 2020, there are only 15% female postgraduate students, a decrease from 2018, indicating that development of talent for research and academic positions is lacking (See **Action 3.2**).
- LAB numbers remain constant at 29%F and there are no female SLs.
- %F postdoctoral researchers has dropped since 2018.

Research staff

Most research staff are at postdoctoral level (25%F), as this is where funding on research projects is usually targeted and received; the only route to obtaining any research position is through open advertisement.

Table 4.2.5: Research staff data in CSIS and Lero@UL by gender, 2018 to 2020

Table redacted.

Our number of female researchers increased from 2018 to 2020 to 32%, higher than HESA (22.8%) and comparable to University of Liverpool (28.6%, 2019) with whom we have benchmarked as they have a similar researcher base.

The international research model for researchers is often contract-based. In Ireland, it is a direct function of how agencies fund research. Therefore, this applies for researchers nationally, including SFI-funded research centres.

Table 4.2.6: Research staff data, disaggregated for CSIS and Lero@UL, by gender, July 2020 (Total research staff: 6F, 13M, 32%F)

Table redacted.

PMSS

PMSS employment contracts are with CSIS in UL, and they are employed exclusively to work within either CSIS or Lero - those in CSIS have UL responsibility only, while those in Lero@UL have responsibility to Lero nationally.

Table 4.2.7: PMSS data, disaggregated for CSIS and Lero@UL, by gender, July 2020 (Total PMSS staff: 13F, 8M, 62%F)

Table redacted.

Table 4.2.8: PMSS by role and gender, 2018 to 2020

Table redacted.

Most administrative and managerial staff are female. With relatively low numbers, it is difficult to draw conclusions about the pipeline.

All the technical officers are male, which has always been the case within CSIS-Lero. This is of concern, particularly as technical officers have many dealings with students, and we have no female role models with whom our students can identify. There is a long-term nature to these positions, with technical staff in situ for many years and little possibility that a position could arise soon.

(ii) Academic, research and PMS staff by grade on fixed-term, open-ended/permanent and zero-hour contracts by gender

Most academic staff in CSIS are on permanent contracts. There are no gendered patterns. Contract staff are mainly TAs.

Table 4.2.9: Academic staff on fixed-term and permanent contracts in CSIS and Lero by gender, 2018 to 2020

All research staff are employed on fixed-term contracts. The increase in the number of fixed-term contract researchers is a direct result of research income success.

Table 4.2.10: Research staff on fixed-term and permanent contracts in CSIS and Lero by gender, 2018 to 2020

All PMSS in CSIS are permanent. As of 2020, 43% of PMSS in Lero are employed on fixed-term contracts. This is tied to the non-permanency of Lero/SFI funding. There are no gendered patterns.

Table 4.2.11: PMSS on fixed-term and permanent contracts in CSIS and Lero by gender, 2018 to 2020

Table redacted.

Figure 4.2.3 Permanent/Contract staff in CSIS-Lero by gender

Figure redacted.

Table 4.2.12: Occasional teaching staff in CSIS

Table redacted.

In UL, there has been a lag in CSIS lecturer recruitment following resignations, retirements and new course development. We supplement teaching with occasional staff while waiting for positions to be filled. Four recruitment competitions, October-December 2020, will fill this gap.

Occasional staff are often people in other positions who have an interest in teaching or researchers who want to build up their teaching portfolio. Researchers may do some teaching in CSIS to aid career development. A requirement of UL PhD student funding is that students undertake up to six hours weekly as TAs within their host department.

(iii) Academic, research and PMS staff leavers by grade and gender and full/part-time status

Leaver data was collected from HR, CSIS and Lero records.

Table 4.2.13: Academic staff leavers employed in CSIS only

Table redacted.

Academic staff turnover is very low, with only four leavers between 2017 and 2020.

Table 4.2.14: Research staff leavers – all research staff on contract

Research staff	CSIS			Lero		
2017	F	M	%F	F	M	%F
Postdoctoral Researcher	0	1	0%	0	4	0%
Research Fellow	0	1	0%	1	3	25%
2018	F	M	%F	F	M	%F
Research Assistant	1	2	33%	1	2	33%
Postdoctoral Researcher	0	0	NA	1	2	33%
Research Fellow	0	1	0%	0	1	0%
2019	F	M	%F	F	M	%F
Research Assistant	0	1	0%	0	1	0%
Postdoctoral Researcher	0	0	NA	0	2	0%
Research Fellow	0	0	NA	0	1	0%
2020 (to June)	F	M	%F	F	M	%F
Postdoctoral Researcher	0	1	0%	0	0	NA
Research Assistant	0	0	NA	0	1	0%
Total	**1**	**7**	**13%**	**3**	**17**	**15%**

Leaving rates for researchers are higher than for academic staff but there are no gendered patterns, with women and men being equally likely to leave. Researchers normally leave because their contract is finishing, with many moving to other positions before completing their contracts. New roles include:

- Permanent academic positions in UL or other institutions;
- Permanent industry positions;
- Contract research positions in other institutions.

There is no evidence that any of these career routes was preferred by women or men.

[redacted]

We have not been completing exit interviews, and when HR have developed the online exit survey (in progress), we will ensure that staff are issued with the survey and that we will analyse the results (**Action 4.1**).

Action summary

Actions to support women in applying for academic, research and PMSS positions are discussed in Section 5.1(i) and for promotions in Section 5.1(iii). We are aware of pipeline problems for academics, particularly at LAB to SL level.

Goal 4: Learn from those leaving CSIS-Lero.

- **Action 4.1**: Work with HR to ensure that all staff who leave are issued with the UL online exit survey.

***Section 4 word count:** 1,862*

5 Supporting and advancing careers

5.1 Key career transition points: academic staff

(i) Recruitment

In CSIS-Lero, job advertisements are written by the job owner, who also constitutes selection boards based on experience relating to the position. These are approved by the HoD and/or LD, Dean S&E and HR. HR policies regarding selection board composition - three members or fewer require minimum 30% gender representation, over three members require minimum 40% - are followed by CSIS-Lero. All 44 CSIS-Lero boards convened were gender-balanced.

UL requires that all selection board members must interview skills training and unconscious bias training (UBT) (completed by 14F/14M in CSIS-Lero). Chairs must attend dedicated interview chair training. In CSIS-Lero, anyone who has not completed UBT cannot sit on an interview board. However, we have not tracked attendance at interview training which has been low (2F/1M – skills, 0F/0M – chairs). We will create a CSIS-Lero requirement allowing only those who attend interview skills training to sit on a selection board (**Action 5.1**)

Fourteen CSIS-Lero women have completed UBT training, Nevertheless, we attempt not to overload individuals and have appointed women to boards when external members were needed (17/44 positions) and will continue this. We identified that selection boards are an opportunity for early-career staff to gain experience and, where seniority was not required, we now include them on boards and will continue this practice.

UL's success in attaining Athena SWAN Bronze institution award status is highlighted on its home page and states its commitment to combating under-representation and advancing the careers of women in STEM in the HE sector.

Academic staff

Table 5.1.1: Academic staff recruitment by year, role and gender 2017 to 2020

Table redacted.

Table 5.1.2: Academic staff recruitment by role and gender 2017 to 2020 combined

Table redacted.

There were relatively few academic appointments between 2017 to 2020, the data show:

- No female applied for the one chair advertised.
- %F applicants is low for lectureships and slightly higher for TA posts.
- Overall, women and men were equally likely to be shortlisted and, if shortlisted, interviewed; women were more likely to receive job offers, albeit the difference is not significant. There are no significant differences in these patterns at role level.

No clear gendered patterns are apparent in the recruitment process, suggesting that the way to increase female representation is to increase the number of female applicants, particularly for senior positions.

For the past two years, CSIS unsuccessfully proposed internally that we would submit an application for the appointment of one female professor (SALI, 2019), but were not successful. We will submit an application in 2021 **(Action 5.2**).

We have no adjunct professors, another route through which we can bring women into CSIS-Lero. We will target to appoint 1F annually (**Action 5.3**).

Researchers

Table 5.1.3: Postdoctoral researcher recruitment in CSIS, 2017 to 2020

Table redacted.

22% of applicants for postdoctoral roles in CSIS are female, broadly in line with the gender representation of applicants for lecturer posts.

Women and men are equally likely to be shortlisted and interviewed; although women are less likely to receive job offers, the small numbers mean that the difference is not significant.

Table 5.1.4: Researcher recruitment in Lero by gender, all roles combined, 2017 to 2019

Table redacted.

Overall in Lero, 20% of applicants for researcher positions are female although female applicant numbers vary widely by year. Similar proportions of female and male applicants are shortlisted. Females are more likely to be interviewed but not significantly so. Offer rates for women and men are similar.

Table 5.1.5: Researcher recruitment in Lero by role and gender, 2017 to 2019 combined

Table redacted.

Examining the data by role does not show any clear pattern in respect of the proportion of applicants who are female as the number of applicants for each individual role is too small.

PMSS

There were only four PMSS competitions in CSIS over four years, one of which was not filled.
Table 5.1.6: PMSS recruitment in CSIS (excluding Lero) by role and gender, 2017 to 2020 combined

Table redacted.

In Lero, over four years, five PMSS roles were advertised, just one at each level, none in 2020. Patterns of applicants reflect the technical knowledge required for specific roles. The most senior administrative position, requiring computer science and management skills, attracted 13%F applicants while the administrator role attracted 24%M applicants. The two technical roles, Senior Technical Officer and Analyst Programmer 3, attracted 1F of 15 applicants.

Overall, female and male applicants were equally likely to be shortlisted, although shortlisted males were 2.5 times more likely to be interviewed than females (30%M, 12%F), but the difference is not significant.

Table 5.1.7: PMSS recruitment in Lero by role and gender, 2017 to 2020 combined

Table redacted.

- Although numbers are relatively low, the proportion of female applicants falls with increasing seniority of role. Overall, women and men are equally likely to be shortlisted and interviewed.
- Numbers receiving offers are too low to draw gender-based conclusions.

Some positions in Lero are not required to follow standard recruitment procedures:

- Lero PI and FI are not paid positions. However, they are sought-after prestigious positions, approved by SFI and supporting the academic's career trajectory. During our AS process, we identified that the number of PI/FI women did not reflect our gender balance. We nominated women to SFI, resulting in 25%F PIs and 16%F FIs. We continue to explore avenues to increase this percentage.
- Parnas fellowships are awarded through open competition by Lero biennially. During our AS process, we implemented gender-proofing of advertisements and a 33%F selection panel. However, it took publication of FAQs and targeting of potential applicants to increase our female applicant base. During rounds 2017/2019, 2F (40%) were appointed. We will continue to target female applicants.

Table 5.1.8: ALECS Marie Sklodowska-Curie COFUND Fellowship Programme Lero 2018-2020

Table redacted.

Lero used similar strategies for ALECS, targeting female applicants and appointing over 40%F reviewers. While consistent with female representation figures, this illustrates the difficulty, seen internationally, in appointing female researchers in computing.

In summary, we plan to develop a process to target underrepresented genders when advertising academic, research and PMSS positions (**Action 5.4**).

Goal 5: Promote the recruitment of women and men to positions in Lero.

- **Action 5.1**: Create a CSIS-Lero requirement so that only those who attend interview skills training can sit on a selection board.
- **Action 5.2**: Submit a Senior Academic Leadership Initiative (SALI) application.
- **Action 5.3**: Appoint one female adjunct professor annually.
- **Action 5.4**: Establish and implement a process to target potential applicants of under-represented genders to apply for CSIS-Lero positions.

(ii) Induction

HoDs are issued with an induction checklist to ensure that new employees receive UL induction training, provided by HR. This was held virtually in 2020 due to COVID-19 and includes:

- Information for all staff, including PDR, HR policies and procedures;
- Academic/researcher induction including information on supports e.g., Research Office, Student Affairs.

Only 33% (4F,12M) of staff appointed to CSIS-Lero undertook induction training over the past three years. Our AS data collection highlighted this as an issue. Participants found the training to

be “useful”, particularly meeting other new starters with whom they could network. Others described their first weeks as “overwhelming” and without clarity on “who to contact to find information”. We will require new employees to do induction training (**Action 6.1**).

New staff are introduced to others within CSIS-Lero. CDs meet with new academics and discuss teaching requirements. New academics normally have a full teaching load in their first semester, so we appoint people, where possible, at least two months prior to start of semester. However, other new employees do not have this mentorship support, particularly contract researchers and TAs, and have indicated that mentorship would be useful when starting (**Action 6.2**).

UL procedures require all new employees to do one year’s probation. They should meet with their line manager quarterly, culminating in a PDR after 12 months, to discuss career objectives. In CSIS-Lero, this has only happened for academic positions (not TAs). We will extend it to all other staff in CSIS-Lero (**Action 6.3**).

Goal 6: Support new employees.

- **Action 6.1**: Establish a process to ensure that all new CSIS-Lero employees attend UL induction training within their first three months.
- **Action 6.2**: Offer mentorship to new CSIS-Lero employees.
- **Action 6.3**: Establish a procedure by which all new employees have quarterly meetings with their line manager for the first year, culminating in a PDR.

(iii) Promotion

Academic staff

Progression/promotion committees are convened at University level, with a required 40% gender balance. Faculty boards nominate academics to these committees through election. For the past three elections, CSIS-Lero nominated a woman - two were successful. Calls for progression and promotion are made, normally annually, via e-mail. When presented in the application, career breaks such as maternity leave are taken into account. UL policies state that there will be no discrimination against any employee.

Within CSIS-Lero, staff members who are eligible for progression/promotion are encouraged by HoD to apply and to attend relevant UL training. From 2017-2020, 6M and 1F have attended training. Senior department members give feedback on CVs when requested.

Table 5.1.9 CSIS academic staff progression across the merit bar (LBB to LAB) 2017, 2018, 2020 total

Table redacted.

All eligible staff applied for progression across the merit bar. Due to small numbers which would make people identifiable, the data is not segregated by gender or year. Numbers are too small to draw conclusions regarding gender.

Table 5.1.10: Faculty of Science & Engineering and UL staff progression across the merit bar (LBB to LAB)

Table redacted.

Within S&E, where CSIS is located, we note that 38%F are promoted.

The last round of L-SL and SL-AP promotions was in 2018 as the 2020 round was delayed due to COVID-19. Of 13 eligible, only one person applied for L-SL. No one was eligible for SL-AP promotion. 1M (only eligible candidate) successfully applied for AP-P personal promotion. Following progression/promotions boards, Dean S&E discusses where weaknesses in their application with candidates. HoD then provides required supports to the candidate.

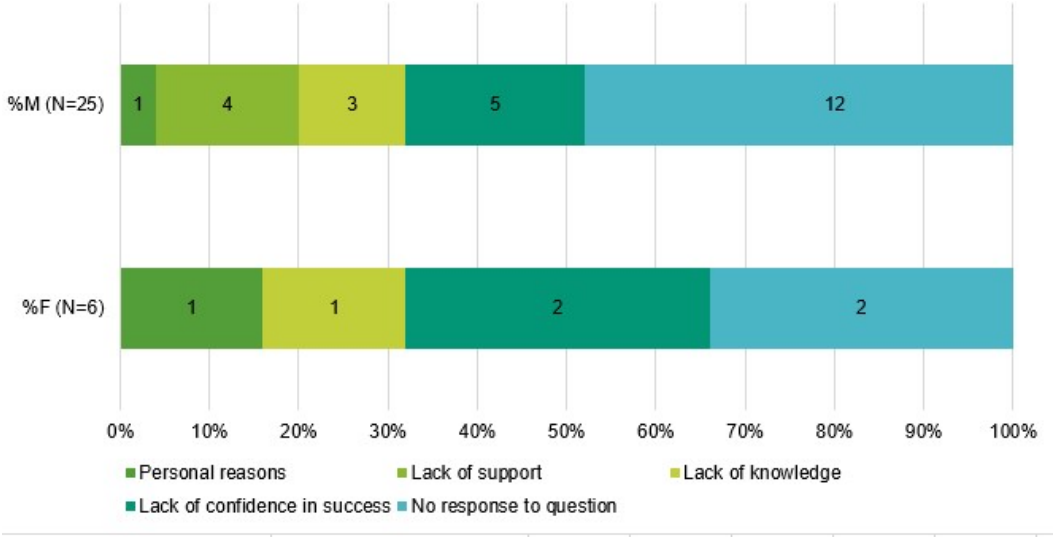

Figure 5.1.1: Staff survey responses: Reasons that CSIS academic staff did not apply for promotion

The reasons for not applying for promotion are concerning. Apart from those with personal reasons (1F, 1M), most CSIS academics need to be given support, knowledge and increased confidence in their abilities.

Researchers

The only means of promotion for research staff is to apply for externally advertised positions either in CSIS-Lero, in UL or in other institutions. Research staff have aspirations to move to other positions, including to PI and academic lecturing positions. That industry was not a specific career goal given by survey respondents is worrying, as 47% of our researchers have moved to industry since 2016. We will provide researchers with an awareness of opportunities in industry (**Action 7.1**).

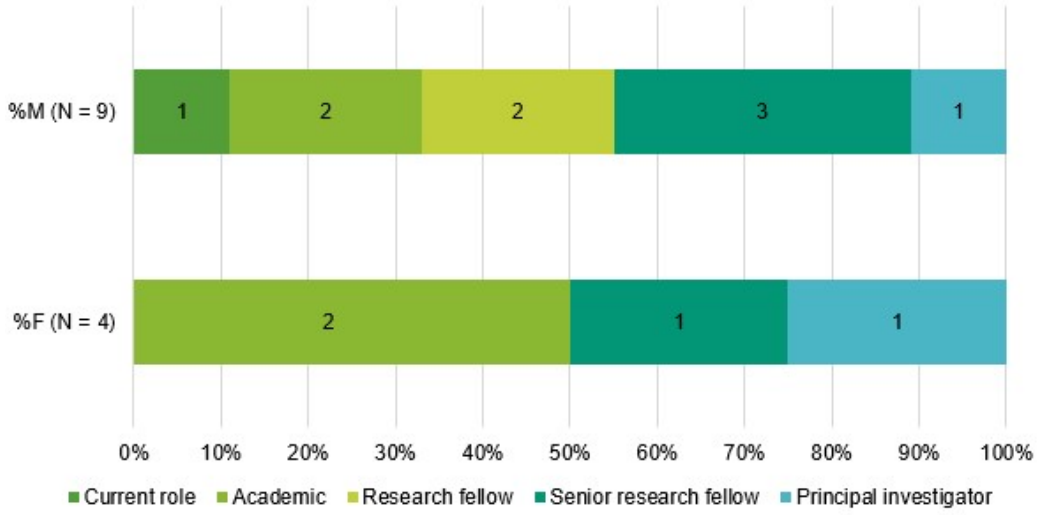

Figure 5.1.2: Staff survey responses: Researcher career goals

PMSS

Job evaluation for PMSS was suspended by the DES in late 2018, a major source of dissatisfaction for PMSS in UL and CSIS-Lero. Discussions are at an advanced stage nationally for its reintroduction, and approval in early 2021 is anticipated. If this does not happen, we will lobby for UL management to continue discussions with DES (**Action 7.2**).

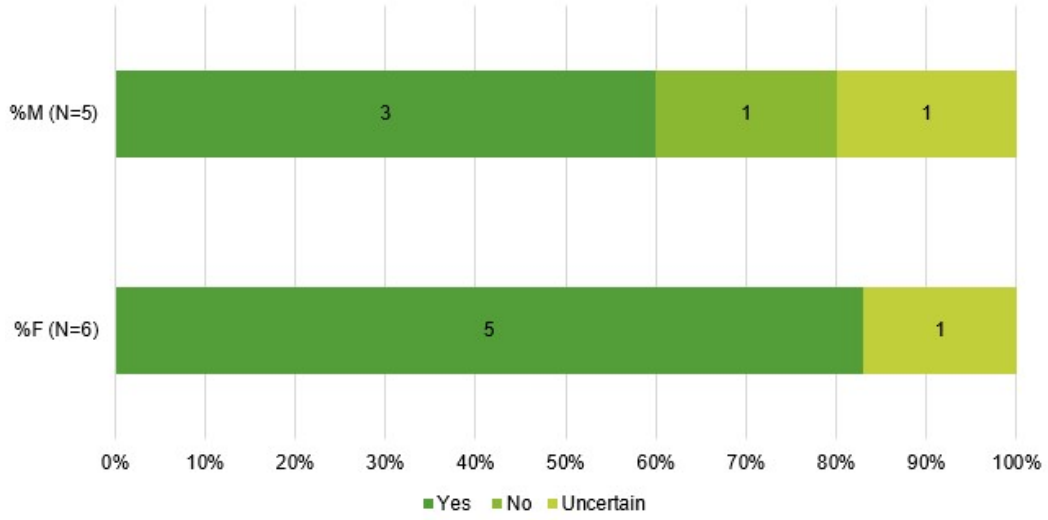

Figure 5.1.3: Staff survey responses: PMSS career goals: Would you apply for job evaluation?

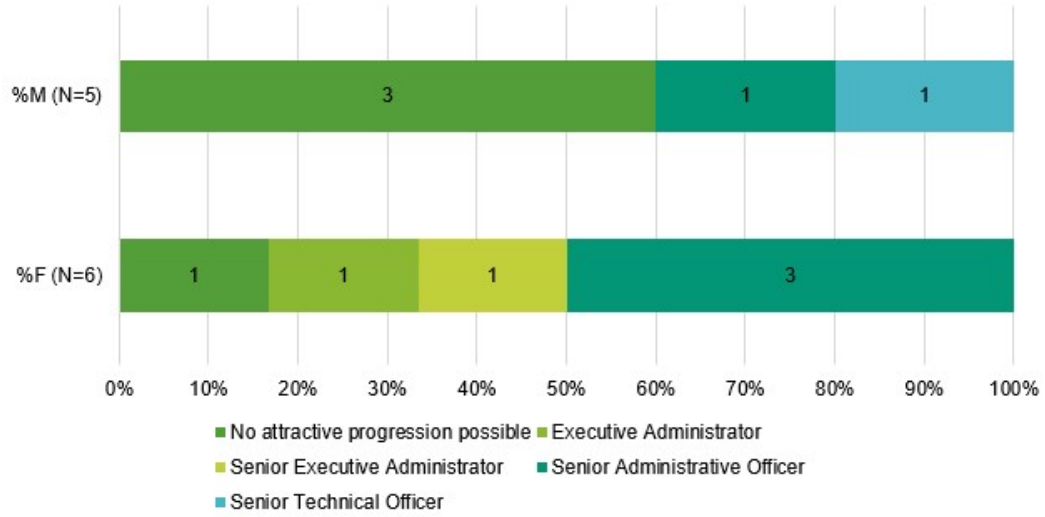

Figure 5.1.4: Staff survey responses: PMSS career goals

PMSS are interested in job evaluation – 8 out of 11 PMSS survey respondents would have applied if possible, so we will provide support. 1F would not apply because she thought she would be unsuccessful and 1F would not have time to put together an application.

We will also support the only current pathway for PMSS career progression - applying for other advertised positions in CSIS-Lero or across UL - and the career development of those on contract so that they are in a position to apply for such positions.

Action summary

To ensure that all staff are prepared for promotional opportunities, we will initiate a process to track the development of training, career and personal development plans during CSIS-Lero PDRs (**Action 7.3**) and will provide them with portfolio feedback (**Action 7.4**).

Goal 7: Prepare all staff for promotion, progression, job evaluation and career opportunities.

- **Action 7.1**: Promote industry-based careers to researchers.
- **Action 7.2**: Lobby UL management for the re-introduction of job evaluation for PMSS.
- **Action 7.3**: Initiate a process to track the development of training, career and personal development plans during all CSIS-Lero PDRs.
- **Action 7.4**: Provide portfolio feedback from senior members of staff for those applying for progression, promotion, job evaluation and career opportunities.

5.3 Career development: academic staff, researchers and PMSS

(i) Training

HR provides a wide range of training and development to support staff in career development. Courses and workshops are advertised campus-wide and on the HR website. Training should be discussed formally at PDR, and staff are encouraged to approach their manager at any stage to discuss training needs. Training is assessed by HR following each course, and modifications are made based on participant comments.

Table 5.3.1: HR Training attendance by all Lero-CSIS staff, 2017-2020

Table redacted.

HR courses taken by staff have higher representation from CSIS men and Lero women. Low numbers of academics and researchers complete academic leadership training (10 (3F, 7M), 14% of 72 staff, 11% of 27F, 16% of 45M) and only one female researcher has taken leadership training in almost four years. **Action 8.3** addresses leadership training.

Regarding equality-based training in CSIS-Lero, UBT and dignity & respect training have been completed by 28 (14F, 14M) and 32 (9F, 23M) respectively. **Action 8.2** addresses UBT and dignity & respect training.

PMSS

Female PMSS survey respondents are more likely to work in administration while males tend to hold technical positions. This could explain gender differences in the responses.

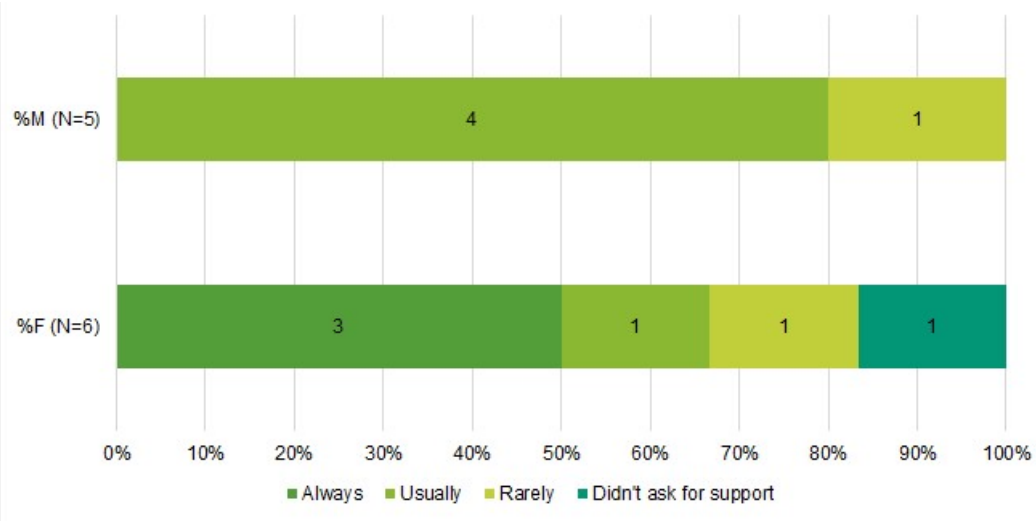

Figure 5.3.1: Staff survey responses: %PMSS to whom time was given to undertake training courses when they requested it

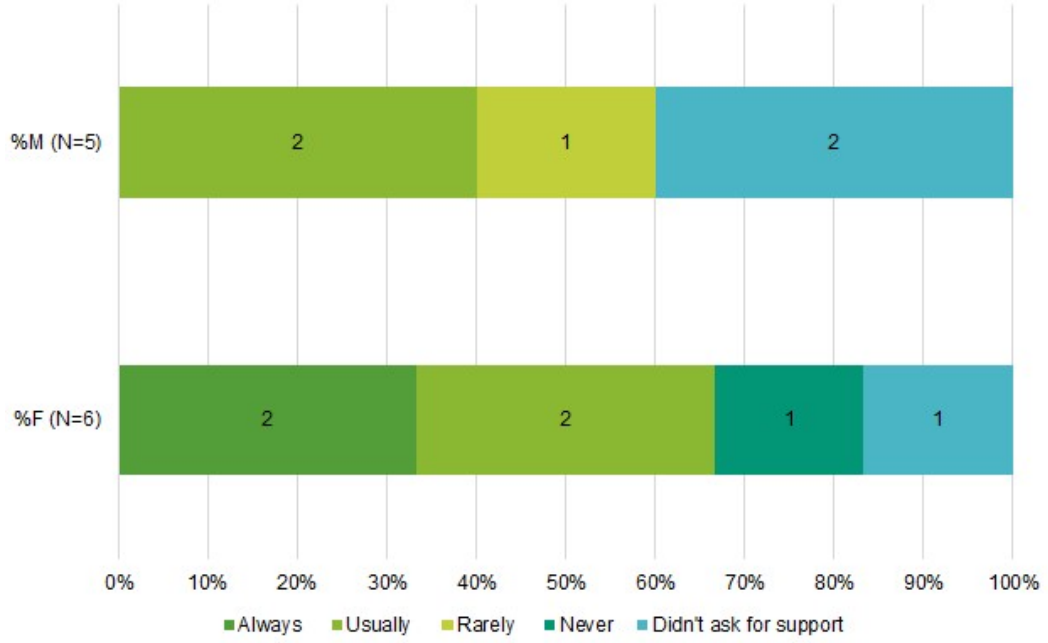

Figure 5.3.2: Staff survey responses: %PMSS to whom time was offered to undertake training courses

The majority of PMSS respondents said they were always or usually given time to undertake training courses. However, male respondents were less likely to ask for or receive financial support for external training.

HR operates a further study policy in conjunction with the department on a 50/50 cost basis and will fund undergraduate, postgraduate and continuing education studies. CSIS-Lero supports this, and two of our PMSS are currently undertaking Level 9/10 qualifications. However, these have been through individual requests rather than from career development plans.

Action summary

We will establish a process through which, at PDR, line managers develop training plans for staff reporting to them, ensuring that such plans are implemented (**Action 8.2**). We will actively promote leadership courses to relevant staff (**Action 8.3**).

Goal 8: Ensure training, career and personal development for all staff.

- **Action 8.1**: Implement a process to ensure that staff and PhD students take unconscious bias training and dignity & respect training.
- **Action 8.2**: Establish a CSIS-Lero process to ensure that training plans for all staff are developed during PDR and subsequently implemented.
- **Action 8.3**: Actively promote leadership courses to relevant staff.

(ii) Appraisal/development review

UL requires that all staff members with a contract greater than 10 months have an annual PDR with their line manager, providing staff with constructive feedback about their performance as part of a discussion regarding career development. Individuals' goals and objectives in line with the strategic objectives of CSIS-Lero and UL are set.

Table 5.3.2: PDR structure in CSIS-Lero

	PDR line managers who hold reviews
Academics	CSIS HoD
Researchers	PI/FIs
PMSS	Direct manager of staff member: HoD, LD, senior PMSS

Staff can attend PDR training – CSIS-Lero attendance is 65% (15F, 30M) - and line managers can attend PDR management training – CSIS-Lero attendance is 10% (1F, 1M). We need to increase the number of people taking training (**Actions 9.1, 9.2**).

Academic staff

Reflected in the staff survey, since July 2019, 22F (69%) CSIS academics (4F, 50%, 18M, 75%) have had PDRs with HoD. [redacted] 92% of those who had a review were either very satisfied or satisfied.

Interviews with TAs highlighted that they do not have annual PDRs.

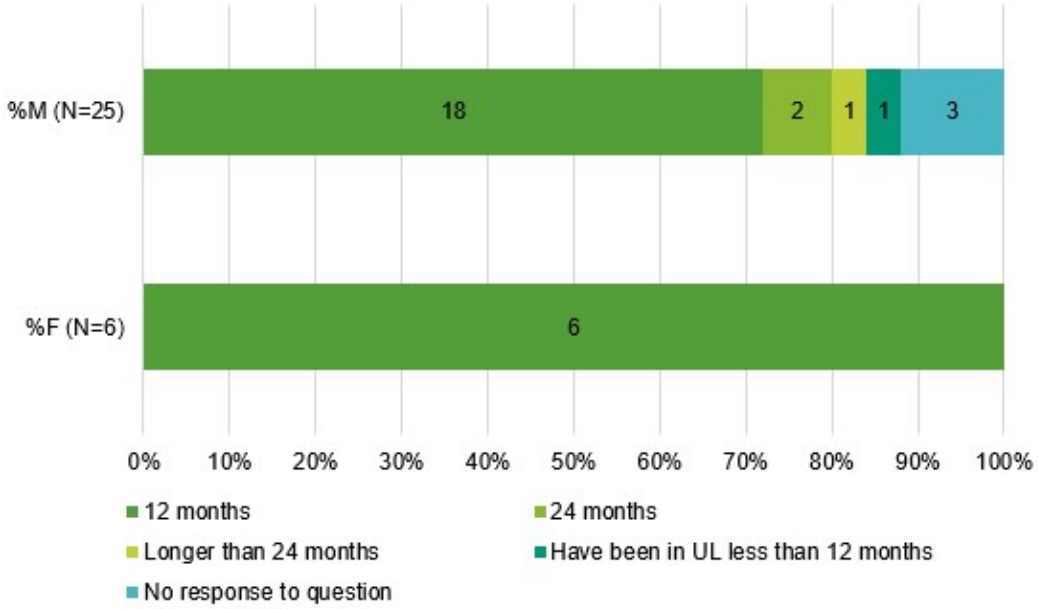

Figure 5.3.3: Staff survey responses: Academics who were offered PDR within timeframe specified

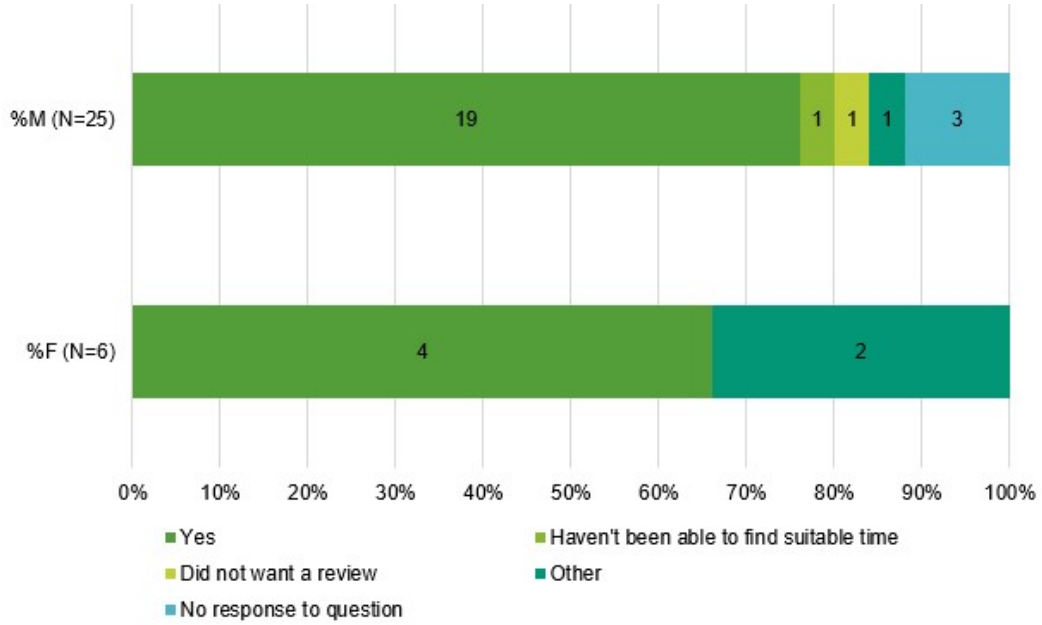

Figure 5.3.4: Staff survey responses: Academics who accepted PDRs

Researchers

We have not maintained statistics on researcher PDRs but will do so (**Action 9.4**). However, the staff survey indicates that researchers have been offered and accepted PDRs, and focus group attendees indicated their satisfaction with career development plans developed through PDRs.

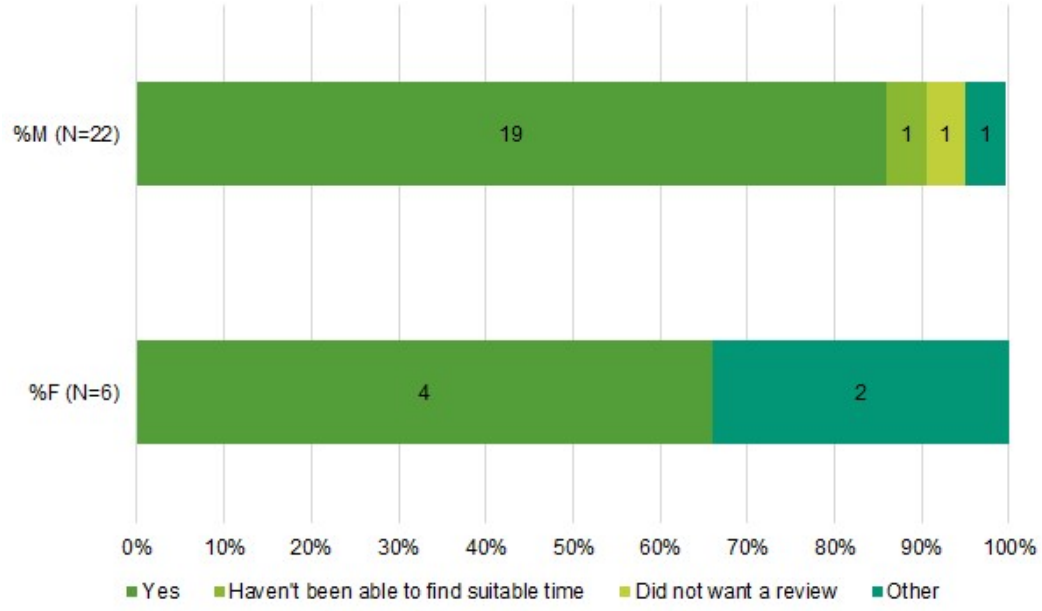

Figure 5.3.5: Staff survey responses: Researchers who were offered PDRs

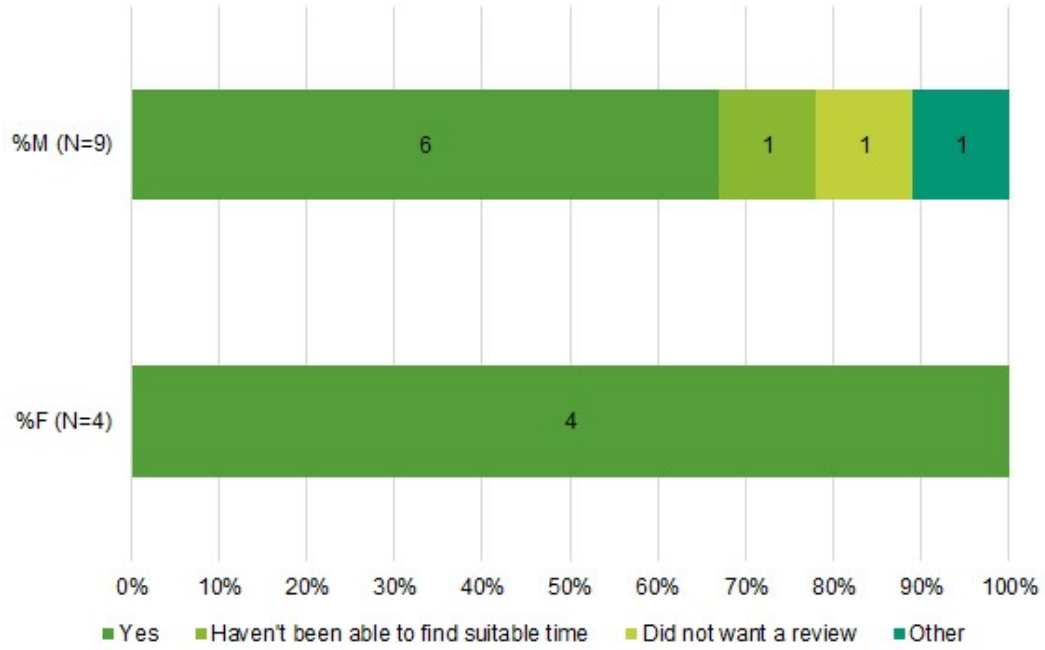

Figure 5.3.6: Staff survey responses: Researchers who accepted PDRs

PMSS

Our statistics show that in CSIS, 2M technical staff (40%) and no administration staff have had PDRs since July 2019. All 14 PMSS in Lero have had PDRs. Many of these have taken place since the staff survey was completed.

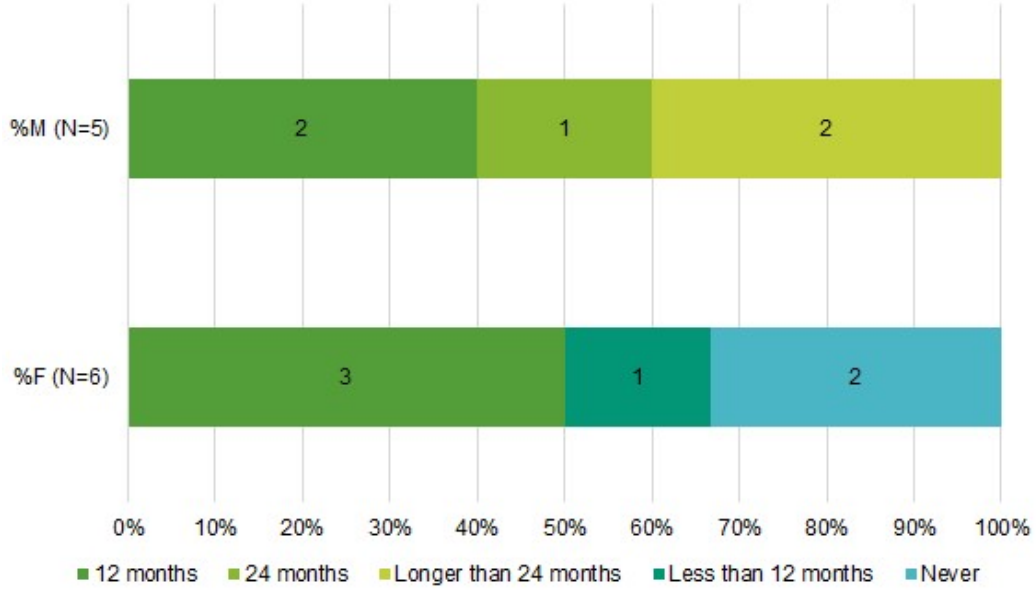

Figure 5.3.7: Staff survey responses: PMSS who were offered PDRs

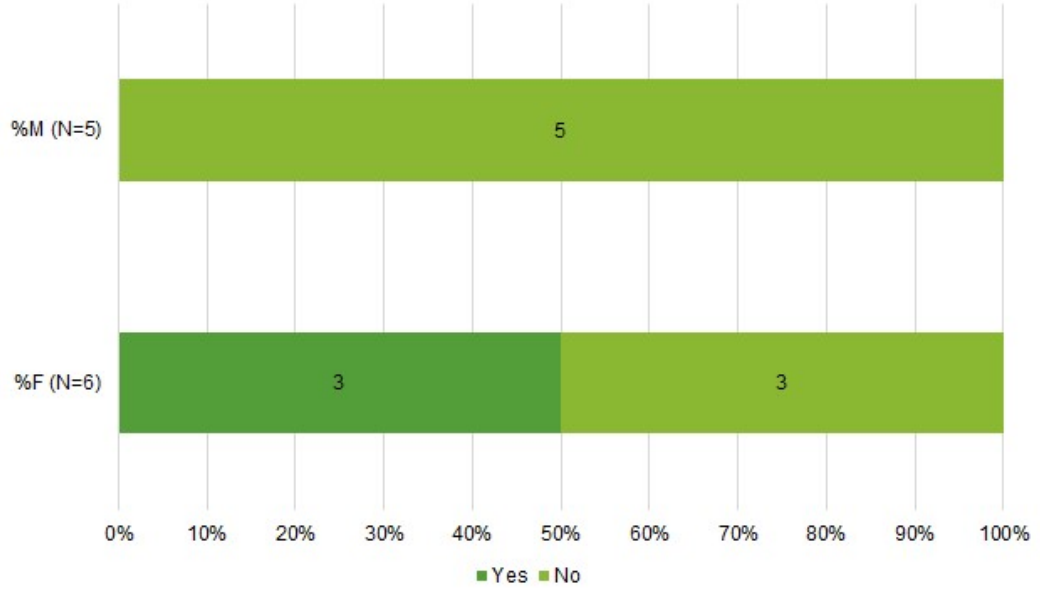

Figure 5.3.8: Staff survey responses: PMSS who accepted PDRs

In the staff survey commentary, 2F stated that the review did not happen after it had been offered or that there was no follow-up after the offer. Those who had reviews had discussions on career development and potential training and were satisfied with the outcome.

Action summary

CSIS-Lero will establish a process whereby all staff, whether permanent or on contract, will be offered annual PDRs, where they, with their line manager, will identify personal career development plans (**Action 9.3**).

Goal 9: Improve availability and effectiveness of PDR for all CSIS-Lero staff.

- **Action 9.1**: Ensure that all staff do PDR training.
- **Action 9.2**: Require all those who are supervising employees to attend PDR and other management training.
- **Action 9.3**: Implement the UL process whereby all staff, whether permanent or on contract, will be offered annual PDRs to identify personal career development plans.
- **Action 9.4**: Maintain statistics on researcher PDRs.

(iii) Support given to academic staff, research staff and PMSS for career progression

Academic staff

Academics in UL can follow a defined promotions process. Discussed in Section 5.1 (ii), supports are given to new academics in CSIS. For example, at induction training provided by HR, staff are introduced to UL Research Office and HR Learning and Development Unit initiatives, such as PhD supervision training and grant writing supports. Personal career development is discussed at one-to-one PDR meetings with HoDs, and support is given allowing for constraints on costs and time.

Academic career progression occurs through the internal promotions process (Section 5.1 (iii)). Academic staff eligible for progression and promotion are invited to UL annual information

sessions by Faculty Deans. In 2020, 1F and 5M from CSIS attended. Those seeking to progress across the merit bar can submit their applications to a HR-constituted portfolio committee prior to the call, to receive feedback in advance of submission date. No one in CSIS has availed of this, although some have asked colleagues informally for feedback. We will formalise this process within CSIS-Lero (**Action 7.5**). Unsuccessful applicants receive their scores in writing. They can discuss with the Dean how they could improve a subsequent application, and implementation of relevant actions with HoD.

As research contributors, academic staff should attend conferences and networking events. Those with personal grants can normally attend such events, while those without personal funding are dependent on available CSIS funding allocated by the HoD. We have identified that there is no significant difference between such support being given to female and male academics.

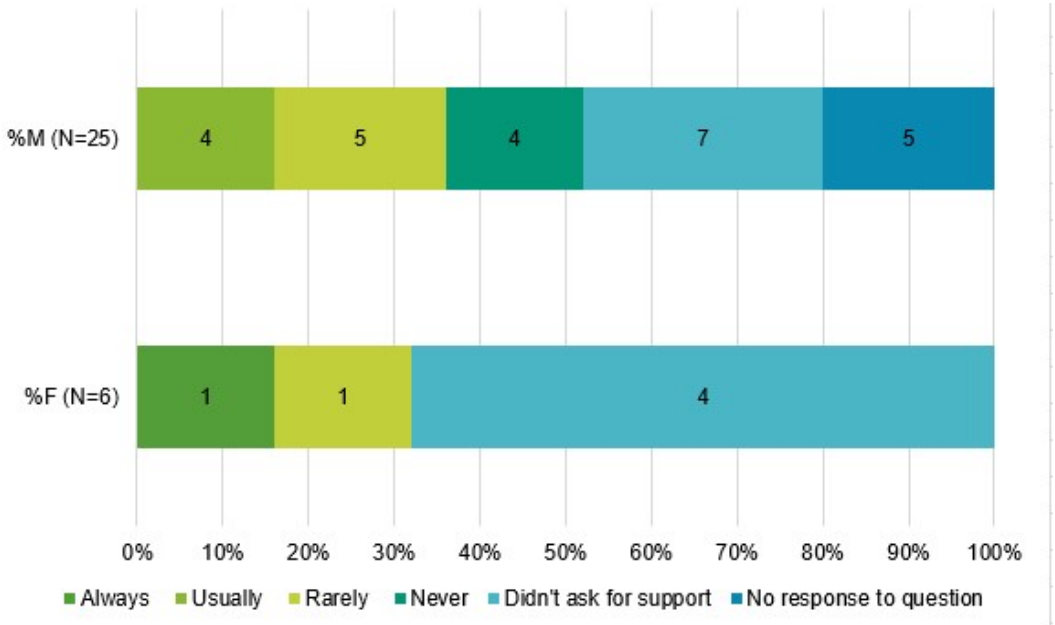

Figure 5.3.9: Staff survey responses: Support given to academics for career development when they requested it – cover for teaching

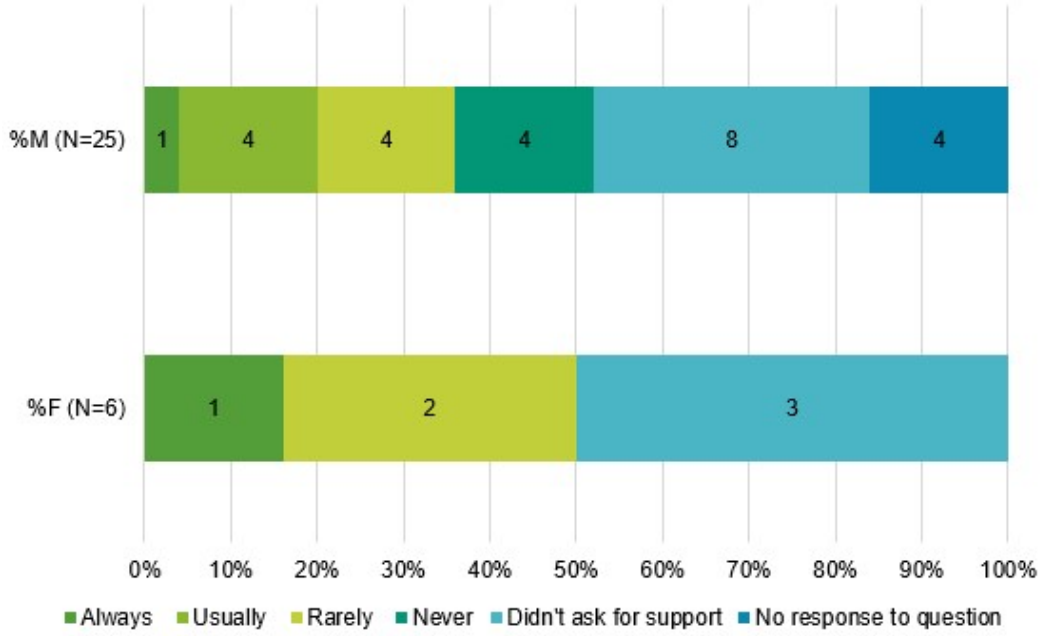

Figure 5.3.10: Staff survey responses: Support given to academics for career development when they requested it – cover for other obligations

Survey results show that academics do not understand how they can receive support to cover their teaching and other obligations when required. Some support is offered to academics – when requested, approximately 50% receive it. However, 30% of academics do not ask for support to attend personal development events; when they do, 30% receive support.

UL policies allow academic staff to avail of sabbatical and special research leave. Sabbatical leave must be taken outside Ireland for one full academic year, while special research leave, normally for one semester, is taken within Ireland. Special research leave was introduced as an institutional AS action, as caring commitments prevented many women from going abroad. To avail of leave, a written application is submitted to HoD/Dean, followed by a written report and feedback session on return.

Table 5.3.3: Sabbatical leave by CSIS academics

Year	Female	Male	Total
2016/17	1	1	2
2017/18	1	0	1
2020/21	1	0	1

In CSIS, teaching cover is provided during sabbaticals. It is of concern that, during the past four years, only four academics (3F, 1M) availed of sabbatical leave and no one has availed of special research leave.

Researchers

Similar to the situation nationally, there is currently no promotions process for researchers in UL. However, the IUA Researcher Career Development and Employment Framework is the preferred national model for researchers and is under consideration by UL.

UL has an HR Vitae course run for researchers and the Researcher Development Programme which includes detailed modules on developing a career strategy, but no CSIS-Lero researchers have participated in these. We will encourage researcher participation (**Action 7.6**). All ALECS fellows attend at least four research courses per annum organised by Lero's ALECS project manager.

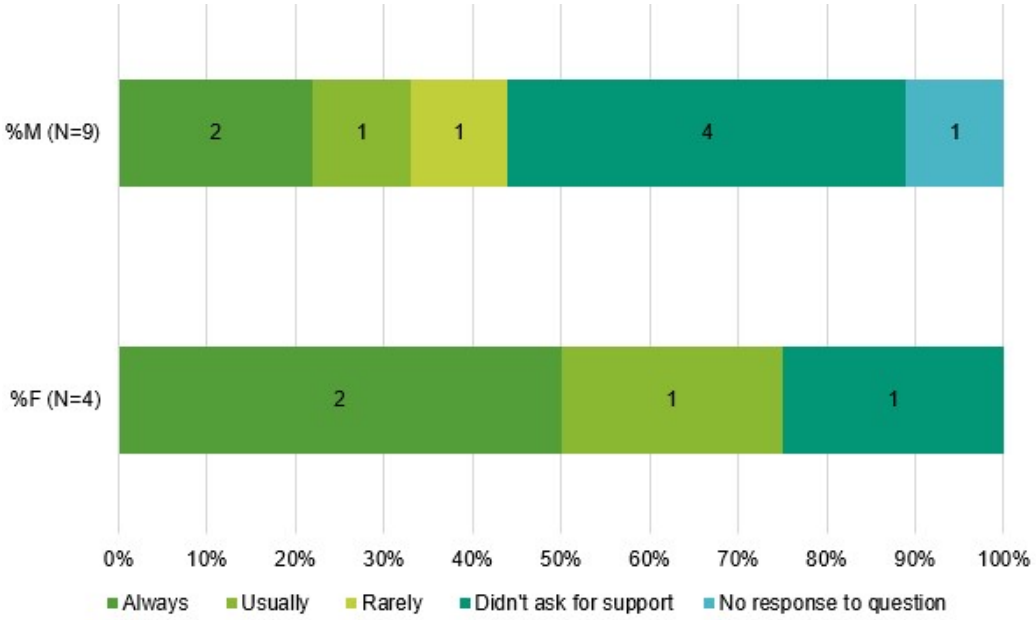

Figure 5.3.11: Staff survey responses: Support given to researchers for career development when they requested it – cover for obligations

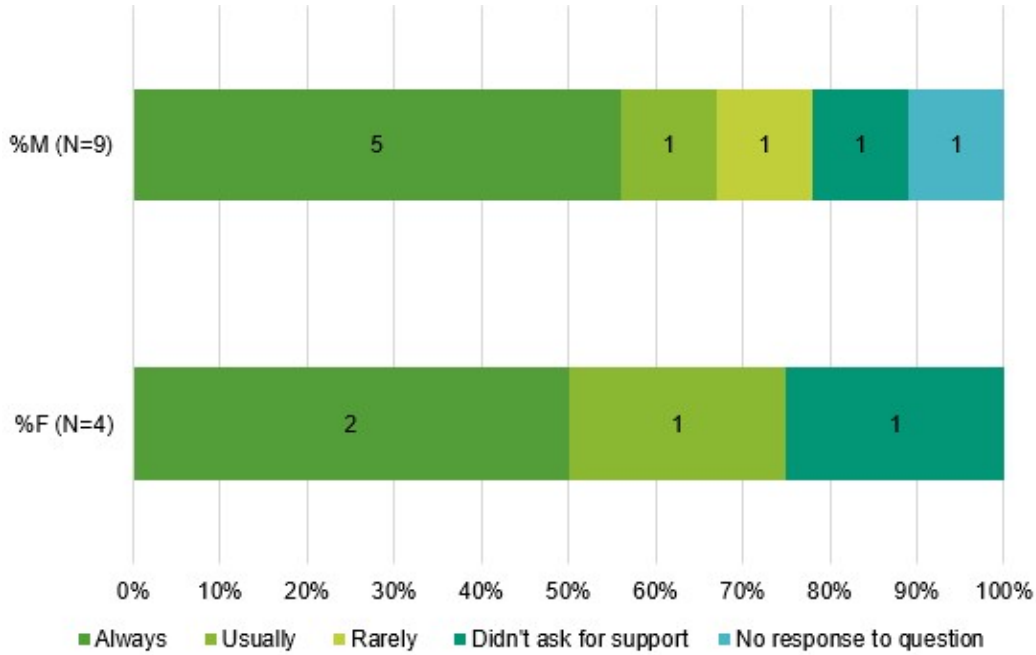

Figure 5.3.12: Staff survey responses: Supports given to researchers for career development when they requested it – cover for fees

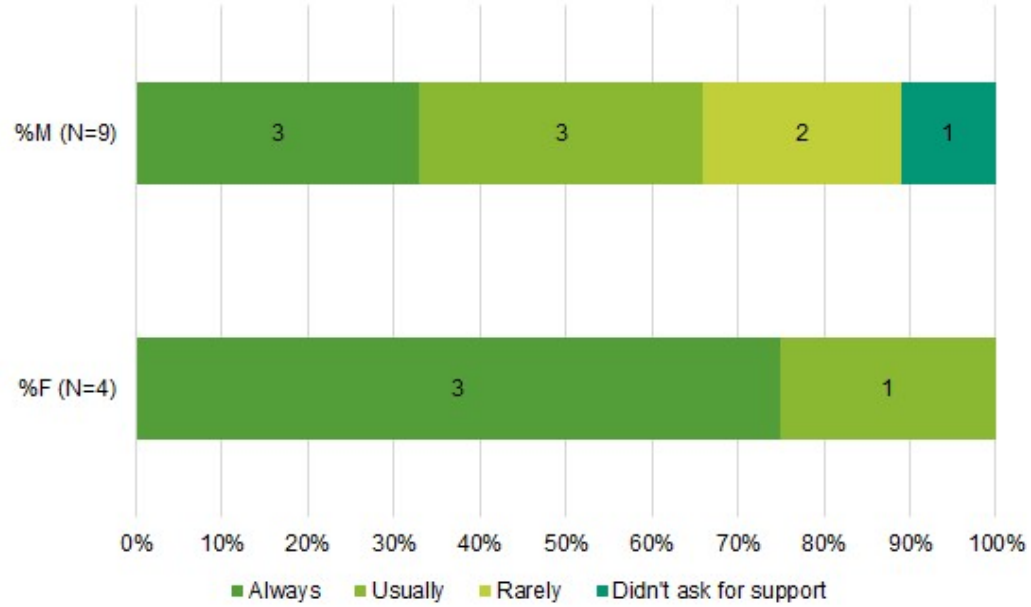

Figure 5.3.13: Staff survey responses: Supports given to researchers for career development when they requested it – cover for travel expenses

Another important source of personal development for researchers is through attendance and presentations at conferences and networking events. Female researchers are less likely to look for support to cover their time to attend personal development events, but when their male counterparts requested support it was granted. All CSIS-Lero researchers in Lero are funded and attend, through their grants, at least one conference per year. Therefore, we did not expect that anyone should have to cover their costs. Female researchers have looked for and received financial support but 33%M have not/rarely looked for this. Administrative support is provided for when researchers request it.

One LAB (1F) and two researchers (1F, 1M) have completed UL's GradDip in Teaching, Learning and Scholarship, all of whom have taken up permanent academic positions. Focus group discussions have revealed that lack of teaching experience is a barrier to researchers progressing into academic positions, so we need to encourage researchers who are building towards an academic career to complete this course (**Action 8.4**).

PMSS

While PMSS do not have a job evaluation system, career development in UL PMSS is undertaken within the remit of PDR and available training courses. We note that 60% of male respondents, mainly technical staff, believe that "*there is no reasonable or attractive progression possible from my current position"*. Concerningly, 83% of PMSS respondents (66.6%F, 100%M) had never or rarely been encouraged to attend seminars or conferences. Through establishing PDR (**Action 9.3**), we will ensure that PMSS have career development plans which define opportunities for each individual.

PMSS can avail of leave, allowing them a period of uninterrupted time to invest in their professional development, but no CSIS-Lero PMSS have taken this opportunity.

Academic, researcher and PMSS mentoring

UL's formal mentoring programme allows mentees apply for a mentor from outside of department. Take-up by CSIS-Lero staff is low.

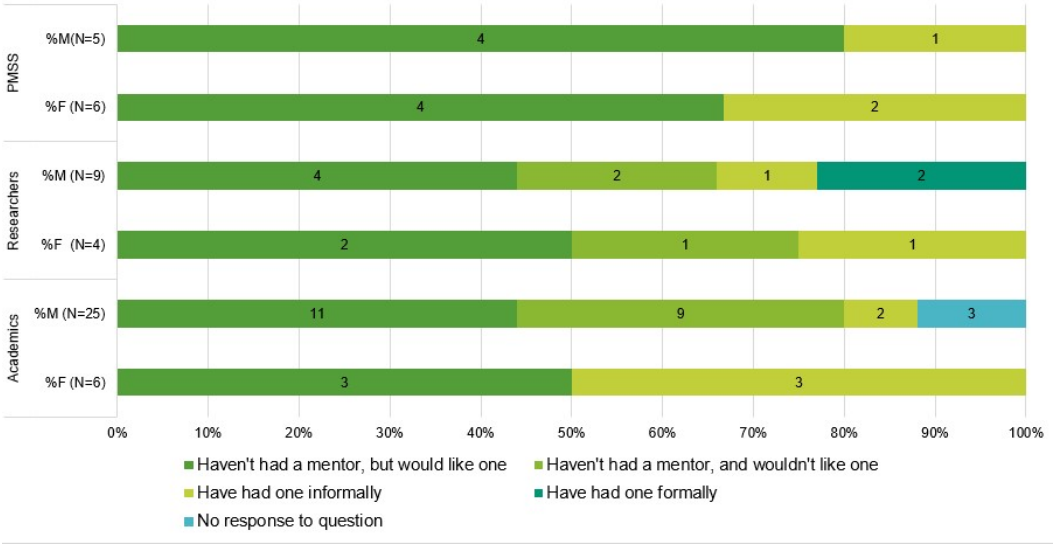

Figure 5.3.14: Staff survey responses regarding mentorship

The majority of staff in each category have not had a mentor, but would like one. Mentoring will be encouraged in CSIS-Lero (**Action 7.7**):

- In UL, mentoring has successfully supported people whose careers previously 'flat-lined' due to external constraints (such as not having time available due to childcare).
- None of the PMSS survey respondents formally had a mentor in the past three years.
- The need for mentoring was highlighted during TA and researcher focus groups.

Contracted TAs (two terms of 10 months maximum) will be offered a mentor once they join CSIS (**Action 8.5**).

Action summary

Our analysis identified that staff are not fully aware of supports for progression, promotion, job evaluation and career opportunities. We will develop an information package on how CSIS-Lero implements career progression supports, including sabbatical, research and professional development leave (**Action 7.8**).

Goal 7: Prepare all staff for promotion, progression, job evaluation and career opportunities.

- **Action 7.5**: Ensure that there is an awareness by CSIS-Lero academics of the UL portfolio committee, who will review portfolios.
- **Action 7.6:** Actively promote HR researcher development courses to research staff.
- **Action 7.7**: Encourage mentoring in CSIS-Lero.
- **Action 7.8**: Develop an information pack on how CSIS-Lero implements career progression supports, including sabbatical, research and professional development leave.

Goal 8: Ensure training, career and personal development for all staff

- **Action 8.4**: Encourage LBBs and researchers to complete the Graduate Diploma in Teaching, Learning and Scholarship.
- **Action 8.5**: Assign an academic mentor to each TA.

(iv) Support given to students (at any level) for academic career progression

Undergraduates

All CSIS undergraduates undertake eight months of practical work experience organised centrally. Rates of placement for all students has been 100% for the past 3 years. This does not show signs of being affected due to COVID-19 across companies, as the CSIS placement rate for January-June 2021 is at 50% (October 2020), similar to other years. UL skills development courses, such as interview skills, and information on job opportunities are advertised via student e-mail. CSIS encourage student participation courses through a FYP module.

UG progression is supported by an advisor system where a CSIS academic is assigned to individual students. Students meet their advisors during their first week (orientation week). This year, due to COVID-19, this did not happen, and academics were encouraged to meet with their advisees online. Academic advice and support are also provided by the CDs and through the ICT learning centre.

The CSIS ICT Learning Centre supports all CSIS students, running tutorials, peer-supported learning groups and specialised classes. Students attending are 30%F, than the proportion of female students in CSIS, confirming that women are availing of these supports. In 2020-2021, we have 6F and 13M tutors/peers (32%F). Recognising that female students need the option to approach female tutors/peers, we will maintain this balance.

Interviews with UGs highlighted the importance of role models, with the type of role model changing throughout their studies. While recognising that "lecturers here [CSIS] have great experiences" from which they can learn, early-year female students would have liked to have female role models from more senior years, particularly to discuss their experiences on work placement (**Action 10.1**). In more senior years, they would have liked to hear industry-based people, women and men, presenting (**Action 10.2**). In 2019, CSIS hosted the joint launch of a student chapter of the national organisation WITS and a Women in STEM student society. We will continue to support networking for CSIS-Lero students. This approach is endorsed by Momentum, Accelerating Equity in Computing and Technology at UCLA , which states that the "single most impactful connection in college is with peers". During our AS workshops, we realised that female CSIS students were not being informed about sponsorship and mentorship opportunities. The AS SAT Vice-Chair, with CDs, now provides such information to our female students and will continue to do so. This has encouraged CSIS students to apply for awards and scholarships, with four students receiving WiSTEM^{2}D awards in 2019-2020.

Photograph redacted.

Taught postgraduates

Our focus groups with PGs, many of whom are non-EU, reinforced that CSIS taught postgraduate courses are well established, seen as having "affiliation with industry" and benefit students in getting employment. However, while they are given the same opportunities regarding skills development courses and information on job opportunities as EU students, they would like "more support in finding jobs". We will invite these students to industry talks (**Action 10.2**). They often have difficulty in attending English language writing courses due to timetable clashes. We will work to rectify this situation (**Action 10.4**).

Both men and women have the opportunity to develop their skills in group projects, and value the "importance of diversity [gender and culture] and learning from each other". However, early support through introduction to modules and general CSIS culture and discussion on assessment types would benefit them. We will develop an orientation package for these students (**Action 10.5**).

Research postgraduates

Research PhD in CSIS-Lero are normally under the supervision of one or more supervisors. These students want to continue their education while prepare for related career-opportunities. Once registered, PGs meet their supervisors at least every fortnight. Overseen by the UL Graduate School, progress is monitored annually by the student presenting their research progress to a CSIS-Lero committee (gender-balanced) of at least two people. This process is approved by the HoD.

CSIS-Lero students participate in national and international conferences and summer schools, presenting their work orally and by poster, normally funded by research projects. There is no gender discrepancy in opportunities to present; all PhD students are similarly funded based on Irish Research Council rates, and women and men participate equally. Lero@UL PhD students participate in the annual national Lero summit where they have the opportunity to present their research by poster. At the summit, six students are selected to present at a doctoral symposium and, since 2013, the panel comprises both a female and male internationally recognised researcher. Students also participate in Lero industry days and other relevant external events.

PG interviews highlighted that, in the main, PGs are not aware of career supports available in UL (**Action 10.3**), but they do get support from their direct supervisors. Those who are working in collaboration with industry (50% of PGs) gain specific employment opportunities. PGs interested in an academic career are encouraged to take up postdoctoral research positions, from where they further develop the research and teaching skills required in academia.

Within the past three years, one female PhD student took leave of absence as an alternative to maternity leave, which is not available to students. When interviewed, she stated that she did not know what maternity leave she would be entitled to. As numbers of mature (MSAC) postgraduate students are increasing (Table 4.1.4), this situation will arise more frequently. We have highlighted this to the URSB through LD's membership, and UL are currently working on a policy which we will implement.

Goal 10: Provide support to current students.

- **Action 10.1**: Promote understanding of co-operative education opportunities to 1st and 2nd year students.
- **Action 10.2**: Promote understanding of industry careers from CSIS courses to 3rd year, 4th year and postgraduate students.
- **Action 10.3**: Provide information about UL career supports to CSIS students.
- **Action 10.4**: Discuss the timing of English language writing courses with the International Education Division.
- **Action 10.5**: Develop an orientation package for taught postgraduate students to introduce modules, CSIS culture and assessment types.

(v) Support offered to those applying for research grant applications

Apart from the Lero grants of ~€57 million from SFI and €15 million from industry, CSIS-Lero academics and researchers have received €8 million in research funding and have published 500+ journal and conference research papers 2016-2020. The UL Research and Innovation Office (RIO) manages grant applications, with supports including grant writing workshops, costing of proposals, and supply of statistics at university level. Feedback from unsuccessful applications is reviewed with a senior member of RIO and a targeted improvement plan is drawn up. Academic staff and researchers know and avail of these opportunities.

Lero's International Funding Manager supports grant applications within the centre. She ensures that all Lero researchers are aware of opportunities, works to ensure collaboration within the centre, and provides support and feedback to those submitting grants.

Apart from RIO, CSIS has no dedicated resource to help increase the number and quality of grant applications. There is currently no support provided (e.g., relief from particular duties) to those submitting grant proposals. This can be achieved systematically via the workload model (**Action 11.1**)

Table 5.3.4: Lero funding analysed by gender June 2016- June 2020

	Number grants per person		Value ratio
Funder	F	M	F:M
Overall: All funders	3.6	3.4	2.2
EU	0.7	0.6	3.4
SFI	0.4	0.1	5.1
Industry	0.7	1.5	2.3
Enterprise Ireland	1.1	0.8	5.8
Other Irish Exchequer	0.1	0.2	7.1
Other International	0.3	0.04	5.0

Results from an analysis of Lero competitive grant funding by gender have highlighted that urgent attention is needed. Overall, men and women receive a similar number of grants (3.6 per F, 3.4 per M), but men receive 2.2 times the value per individual as women. By funder, grants range from men receiving 2.3 times the value that women receive from industry to 7.1 times for non-SFI Irish Exchequer funding. We will commission a relevant study (**Action 8.6**).

Goal 8: Ensure training, career and personal development for all staff.

- **Action 8.6**: Commission a report to identify reasons why women are not receiving similar grant amounts to men and take actions based on the results.

5.5 Flexible working and managing career breaks: academic staff, researchers and PMSS

(i) Cover and support for maternity and adoption leave: before leave

In CSIS-Lero, any employee, including those on fixed-term contracts, due to take leave discusses arrangements with their line manager, who has the responsibility to organise and pay for duties (as per UL policy), including teaching and research supervision, to be covered in their absence. UL has established a fund to cover fixed-term contract leave, and extensions need to be approved by the funding agency. Employees are encouraged to work with their line manager to ensure that they can take leave with minimal negative impact to their career. UL policy requires that PDRs should be scheduled two months prior to the person taking leave.

Only one CSIS-Lero employee, a postdoctoral researcher, has taken leave during the past three years. UL policy was followed [redacted]

(ii) Cover and support for maternity and adoption leave: during leave

UL's policy, followed within CSIS-Lero, is that staff are not required to work while on leave. However, academics and researchers, particularly, may want to keep in touch in order not to lose out on career opportunities, such as participation in grant proposals. This is resolved between the individual and line manager, with the line manager being the contact person internally within UL. The person on leave is encouraged to participate in social events, which are currently held online due to COVID-19.

(iii) Cover and support for maternity and adoption leave: returning to work

UL offers a Research Grant for Returning Academic Carers (RGRAC) of €21k to support academic staff in re-establishing their independent research careers following extended leave (20 weeks or more). This provides additional support to minimise the impact of extended leave on research activities. No CSIS-Lero academic staff member has been eligible for this grant.

In UL, breastfeeding facilities and a comfortable, lockable room are available with a fridge for storing expressed milk. This is centrally located on campus and available to all staff.

Young female employees have concerns that loss of time due to leave will affect the individual's career. UL allows for gaps such as maternity leave to be accounted for in recruitment policies; these are applied in CSIS-Lero.

Prior to an employee's return, the line manager must meet with them to discuss any support measures needed, such as flexible working. The line manager must hold a PDR meeting with the returner within three months of return.

(iv) Maternity return rate

[redacted] CSIS-Lero has taken maternity leave in the past three years, so no data on maternity return rate is available.

(v) Paternity, adoption, and parental leave uptake

Table 5.5.1 Leave taken within CSIS-Lero

Year	2017			2018			2019			2020		
Gender	F	M	T	F	M	T	F	M	T	F	M	T
Paternity leave	-	1	1	-	1	1	-	1	1	-	1	1
Parental leave	1	0	1	2	0	2	3	0	3	1	0	1

In CSIS-Lero, men have taken paternity leave. However, only women have taken parental leave. This will be addressed through information distribution on policies (**Action 7.9**) and PDR discussions (**Action 7.3**). HoD organises replacement for required duties when staff take leave.

Table 5.5.2: Staff caring responsibilities (survey responses)

Caring responsibilities	Academic Staff		Researcher		PMSS	
	F	M	F	M	F	M
Childcare	0	7	2	2	2	2
Caring for an individual with a disability or illness	0	2	0	0	0	2
Eldercare	0	5	0	0	1	0

Access to childcare is an issue, with three researchers (1F, 2M, 75% of those with childcare) reporting being "stressed" because of this. Of PMSS, 1F and 1M strongly agreed that they were regularly required to ask family members, other than parents of the child, to provide childcare. In CSIS-Lero, we must be cognisant of people's caring requirements. When extra hours are required, such as when large grant proposals or reviews are due, we will ensure that everyone on the team can make the work hours being suggested (**Action 11.2**).

(vi) Flexible working

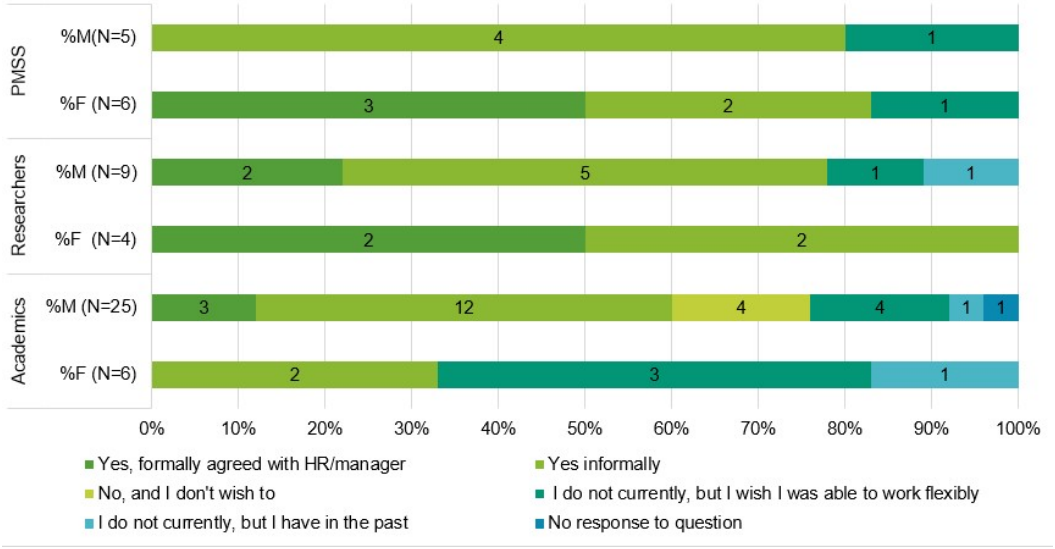

Figure 5.5.1: Flexible working by CSIS-Lero staff (survey responses)

Many academic and research staff use the flexible nature of their contract informally, with only three academics and six researchers formally agreeing flexible working. All academic and research staff must be present for meetings, events and all commitments related to teaching.

The UL Flexible Working Hours policy is available to PMSS only and is subject to operational needs. Employees may vary their times of arrival and departure. In CSIS-Lero, PMSS who want to work flexibly are normally accommodated within the department through discussion with their line manager.

Under the terms of UL's shorter working year scheme, unpaid leave is available annually for two to thirteen weeks, with the cost of the unpaid leave taken in equal instalments monthly throughout the year. In CSIS-Lero, though numbers are low, the number availing of this increased in 2020.

Table 5.5.3 Shorter working year take-up (available to PMSS only)

Table redacted.

Three PMSS work flexibly on an informal basis (staff survey), with 1M and 1F saying that they would like to be able to do so.

All staff members may apply to take unpaid professional leave with HoD approval. [redacted]

(vii) Transition from part-time back to full-time work after career breaks

No CSIS-Lero staff have worked part-time after a career break. Nobody on a shorter working year has returned to full-time work.

Academics returning from sabbatical leave are required to take up a full teaching load. HoD often uses this as an opportunity to rotate academics to teach different modules in the department.

Action summary
There are supports available to UL staff who wish to take leave. However, our evidence shows that CSIS-Lero staff do not have an understanding of such supports. We will develop an information pack (**Action 7.9**).

Goal 7: Prepare all staff for progression, promotion, job evaluation and career opportunities.

- **Action 7.9**: Develop an information pack clarifying CSIS-Lero implementation of UL leave policies.

Goal 11: Distribute workload fairly, with respect also to gender and work/life balance.

- **Action 11.1**: Ensure that family commitments are considered when staff are required to work outside normal working hours.

5.6 Organisation and culture

(i) Culture

During interviews and focus groups, staff stated that they find CSIS-Lero supportive, inclusive and welcoming. When new staff members start, they are met by their line manager, who ensures that they meet other staff members, and they are formally welcomed at department meetings. Successes such as promotions and publications are celebrated, both at meetings and in monthly e-mail updates from HoD and LD. When we host events, such as Lero industry days or CSIS FYP demonstration days, all department members are invited to both the formal and informal events.

There are two kitchenettes in the Tierney Building for use by Lero@UL staff, and one staff room in the CS building for CSIS staff. Neither building has a restaurant, so staff arrange to meet informally in other restaurants on campus, four of which are located within 100m of the two buildings.

To ensure that AS principles are embedded in CSIS-Lero operational and strategic management, AS is a standing agenda item for all CSIS and Lero executive meetings. We discuss findings, and all staff are encouraged to contribute to the AS submission.

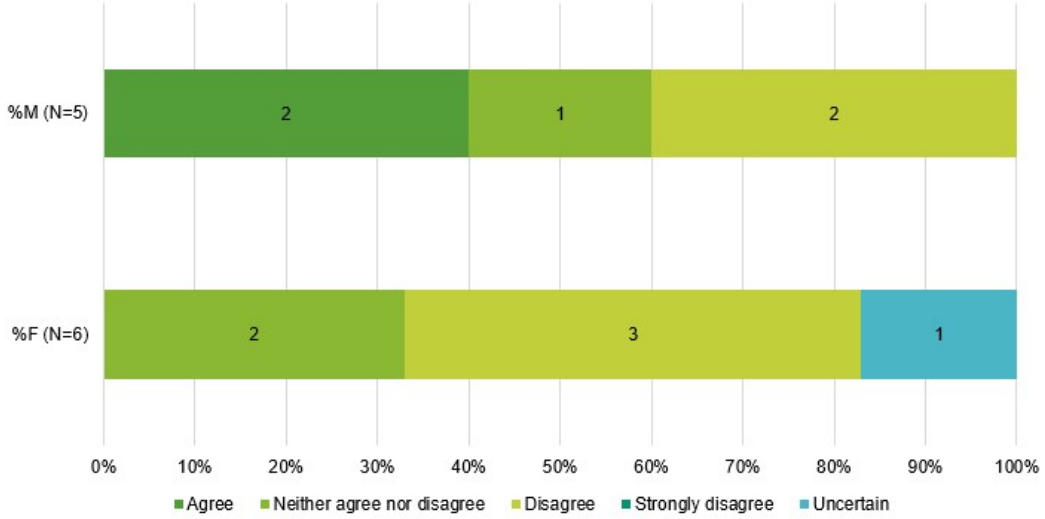

Figure 5.6.1: Responses by PMSS to survey question: "All staff regardless of gender or other protected characteristics have equal opportunities for promotion."

The current non-availability of PMSS job evaluation was highlighted in our staff survey. HoD has explained the current process, and the UL President, in recent town hall meetings, has discussed how UL is working nationally to resolve this problem.

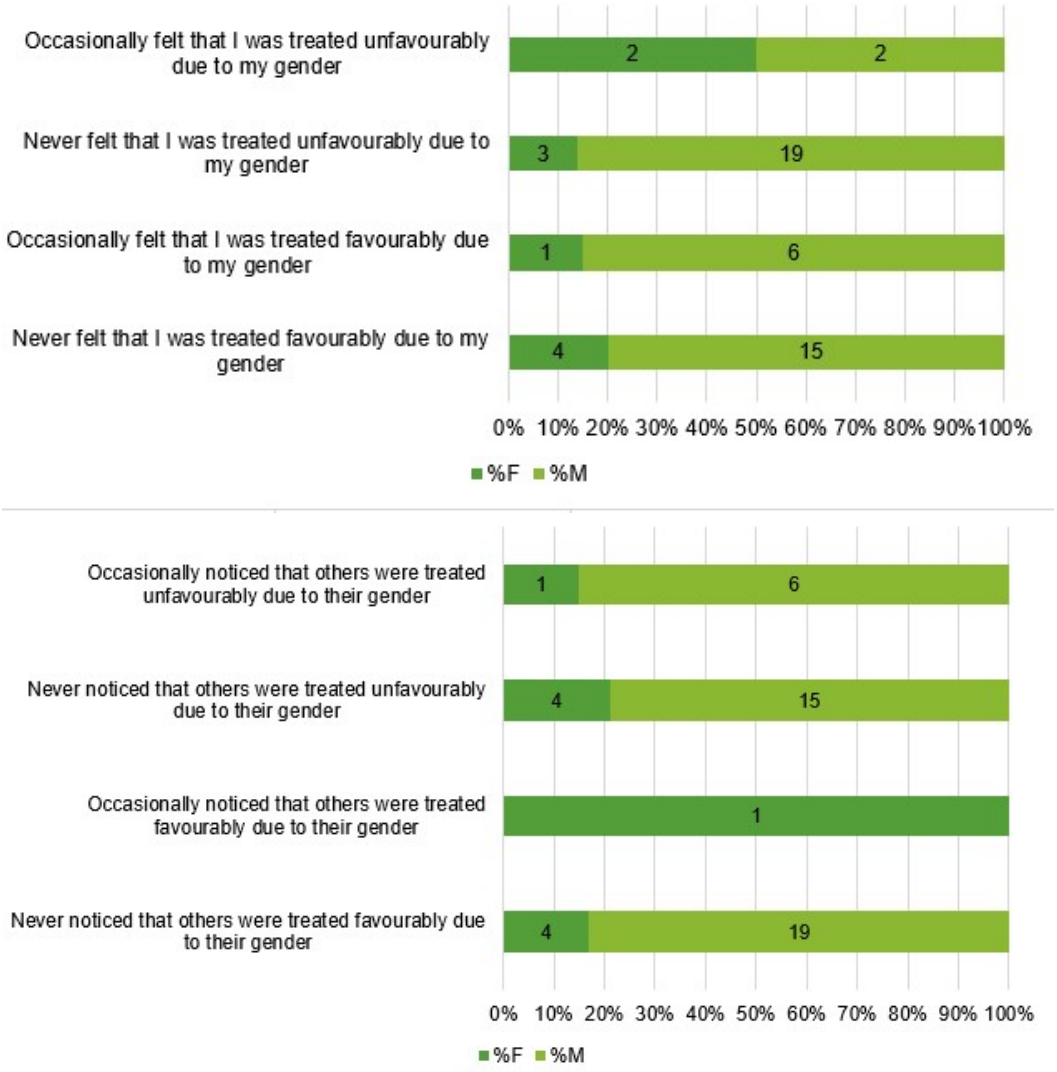

Figure 5.6.2: Academic survey response to "Treatment due to gender" question in staff survey (more than one answer could be given by respondents)

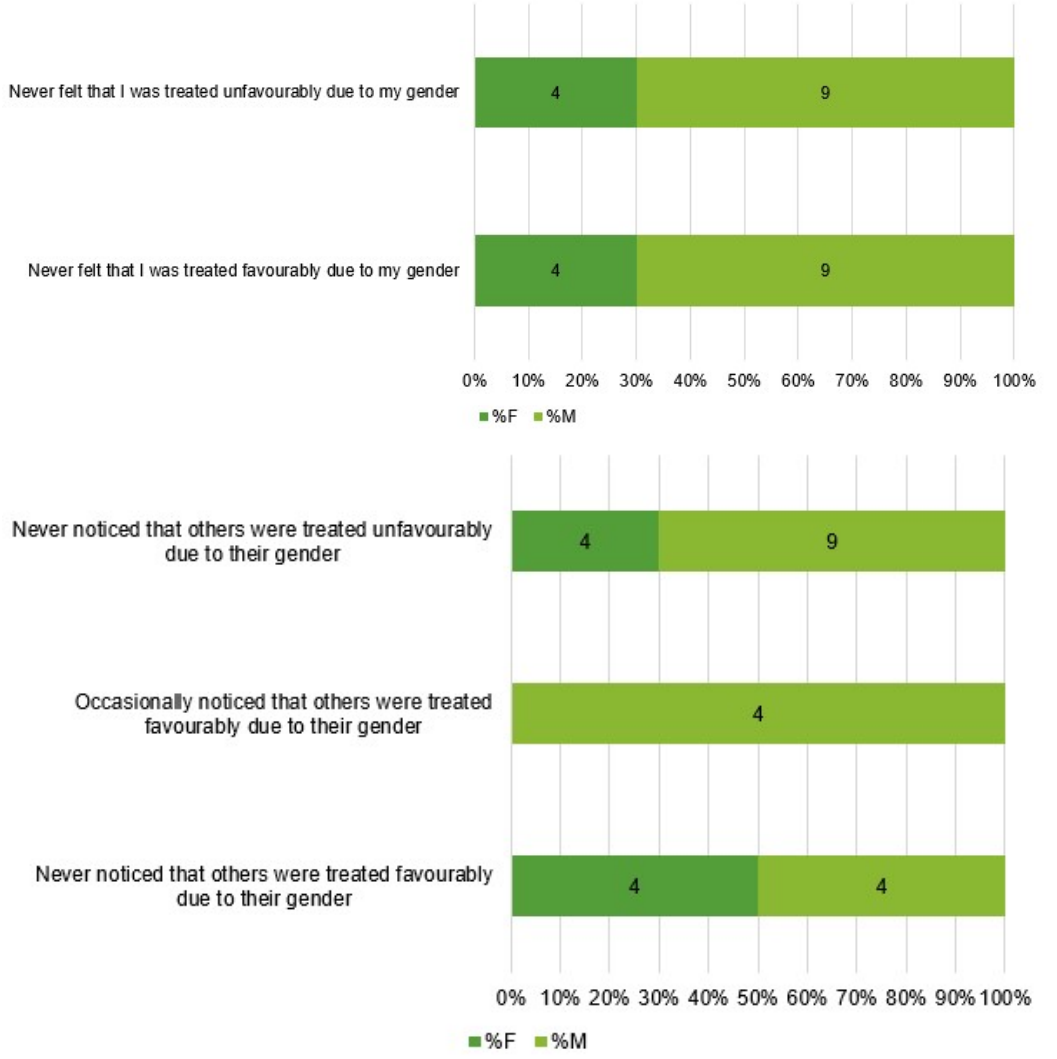

Figure 5.6.3: Researcher survey response to "Treatment due to gender" question in staff survey (more than one answer could be given by respondents)

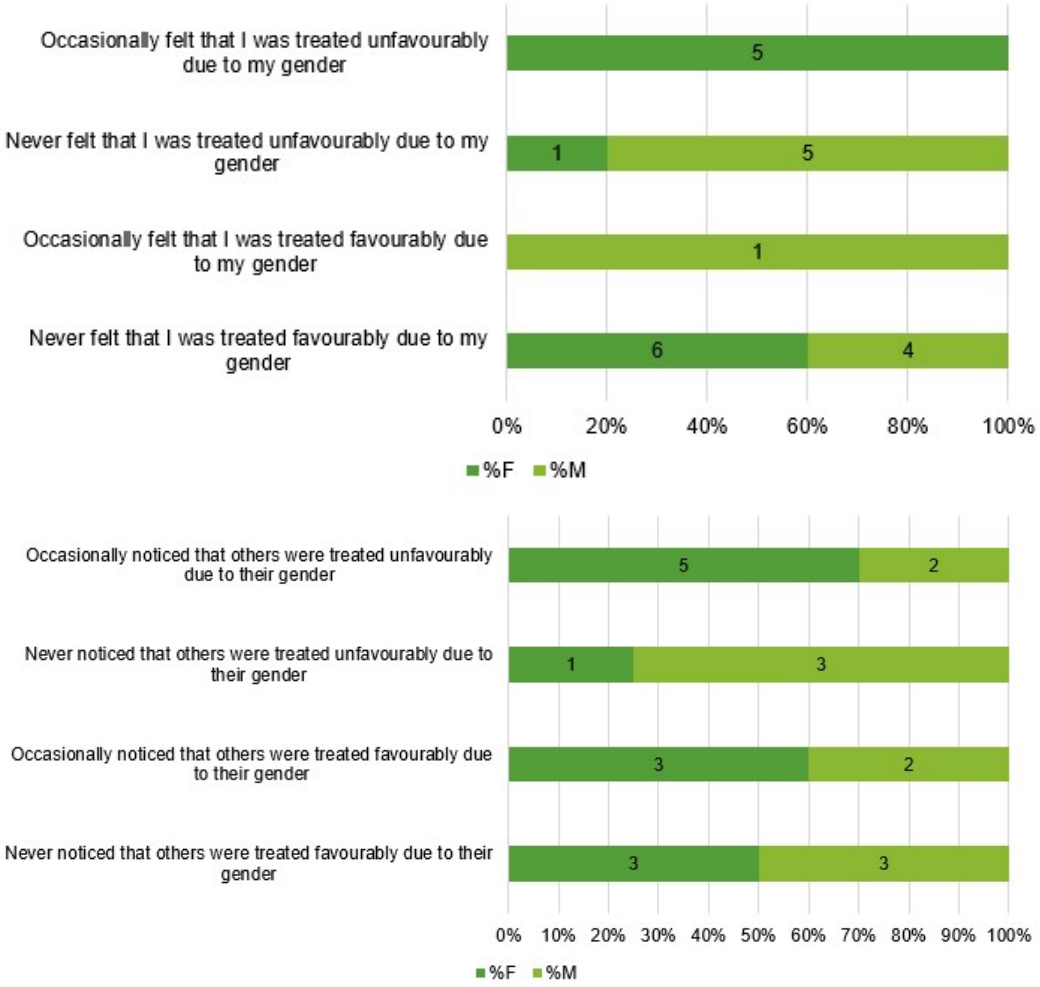

Figure 5.6.4: PMSS survey response to "Treatment due to gender" question in staff survey (more than one answer could be given by respondents)

Most staff believe that there is equality of treatment related to gender with some 'occasional' deviations from this. Observations of inequality are higher among PMSS. Apart from lack of job evaluation, interviews and focus groups did not reveal reasons for this. CSIS-Lero follows the UL Dignity & Respect policy on bullying and harassment, and, if possible, issues are resolved informally through a panel of designated persons. Where this is not possible, issues can be reported formally to UL. Although PGs are not staff members, they research and teach in a similar environment. We have not previously considered that they should undertake dignity & respect training, but this is an action we will now implement, as well as ensuring that all staff undertake UBT (**Action 8.1**).

In our UG and PG focus groups, students commented positively on how progressive and supportive UL is in delivering gender-related workshops, developing policies around gender, and introducing gender-neutral bathroom facilities into the CS building.

The AS process has helped us to identify cultural issues and to develop actions around these. In our Athena SWAN workshop (**Action 1.4**), we will discuss workplace culture. Biennial surveys and focus groups will allow us to measure improvements and their impact (**Actions 1.5, 1.6**).

(ii) HR policies

Each UL faculty is supported by an HR business partner, who works closely with HoDs to implement effective HR strategies and programmes. Thus, CSIS-Lero is supported in implementing all UL policies in the area of workplace culture; policy changes are communicated to staff by email.

In 2016, UL undertook an equal pay audit for all academic and research staff. The conclusion drawn was that there is no difference (or negligible due to the multiplier used) between the actual salary for male and female staff.

Management training is provided to HoDs as part of their compulsory induction. However, LD, members of the CSIS-Lero Operations team, FIs and PIs also have line management responsibilities. To-date, CSIS-Lero has not considered attendance at management training for such staff. We will require that all those with line management responsibilities attend this training (**Action 9.2**).

(iii) Representation of men and women on committees

All CSIS academics, including academics who are Lero members, and PMSS belong to the CSIS department board where decisions, such as progressing new courses and technical requirements for the department, are taken. One other Lero@UL representative sits on this board.

CDs and course boards make academic decisions within CSIS. CDs are appointed by HoD, based on their overall workload and academic qualifications. Incumbents change every 3-4 years. They represent CSIS at faculty level, which includes decision making on S&E courses. CSIS has 13 CDs: 4F, 9M (31% F). 1F and 1M have responsibility for multiple courses which are similar in structure. Twenty-three people are on course boards, 6F and 17M (26% F). Given that we have 25% female academics in CSIS, there is a good F/M balance on these committees.

Student grading decisions are made by examination boards and grading committees, of which all academics are members. Decisions about students moving courses and student appeals are dealt with by the Student Status committee (1F, 2M), on which one member is replaced annually.

Committee service is encouraged among all CSIS staff regardless of seniority, providing a range of experiences and opportunities. Vacancies are discussed at departmental and PDR meetings and service will be recognised in WAM (as discussed in Section 5.6.(v). WAM is not currently implemented).

Table 5.6.1: Representation of women and men on Lero committees

Lero committees	F	% F	M	% M
Lero Governance (chair M)	3	30%	7	70%
Lero Advisory Board (chair F)	4	40%	6	60%
Lero Executive Committee (chair M)	4	25%	12	75%

In Lero, we have worked to increase female representation on boards, and will continue to do so as our number of female PIs increases (**Action 4.5**).

CSIS has representatives on decision-making committees at university and faculty level. Departmental membership of each of these committees is governed by UL policies.

Table 5.6.2: Representation of CSIS-Lero women and men on UL committees

University of Limerick committees	F	M	%F
Academic Council	1 (HoD)	0	100%
Athena SWAN Steering Committee	1	0	100%
University Research Strategy Board	0	1	0%
Campus Infrastructure Committee	1	0	100%
Promotions Board	0	1	0%
Web Project Committee	2	0	100%
Environmental Committee	1	2	33%
Mental Health Committee	0	1	0%
Open Research Working Group	1	0	100%

Table 5.6.3: Representation of CSIS-Lero women and men on S&E committees

S&E Faculty committees	F	M	%F
S&E Research Committee	1	0	100%
S&E Ethics Committee	0	1	0%
S&E ASSC	1	0	100%
Dean's Management Group	1 (HoD)	1 (LD)	50%

Some committee memberships are reserved for HoD and LD. Apart from these two individuals, committee membership is relatively evenly split between a number of people and there is no evidence of committee overload for any one person.

(iv) Participation on influential external committees

Academics and researchers are encouraged to participate in external committees, particularly conference committees. They can apply for funding to attend organising committee meetings. When people achieve membership of prestigious committees, this is publicised through press releases and on social media.

Table 5.6.4: Prestigious positions held by CSIS-Lero on international committees

President, Association for Information Systems (www.aisnet.org)	M
Vice-President European Association of Software Science and Technology	F
Vice-President, Irish Science, Sound, Technology Association	M
Europe Regional Director for the International Computer Music Association	F

Photograph redacted.

[redacted] *received national attention, including a feature on RTE.*

Table 5.6.5: National and International external committee membership

External Committee Membership	F	M
National Athena SWAN network	2	
International Computer Science / Software Engineering Working Groups	3	4
Research Centre / National boards	4	
Conference Steering Committees	4	
Chairs Conference / workshop meetings	2	
Conference Organizing committee	1	
Editorial boards of international journals	2	1

5F and 3M hold membership of national and international committees through personal choice and interest, although such membership can support research collaborations and, consequently, career development. We will encourage CSIS-Lero staff to participate in relevant committees through their career and personal development plans (**Action 8.1**).

(v) Workload model

UL's workload allocation policy requires the HoD to ensure that each academic staff member has a balanced and reasonable workload relative to others in the department in terms of teaching, research and service (internal and external). UL is piloting an electronic-workload allocation model (e-WAM) in the Faculty of EHS.

At focus groups, staff expressed concerns regarding workload.

"If a paper or grant proposal is due, what choice do I have but to work on it? Time cannot be an issue if working in a team."
"Student projects now need to be supported during summer months, making it difficult to take holidays."

Within CSIS-Lero, while there is no formal model in place, and individuals have concerns, HoD and LD endeavour to ensure that responsibilities are allocated fairly as seniority and interest allow. For example, during the COVID-19 pandemic, personnel with a lighter teaching load were responsible for drafting the building safety guidelines. To ensure that workload is gender balanced, we will compile WAM data (**Action 11.2**).

Goal 11: Distribute workload fairly, with respect also to gender and work/life balance.

- **Action 11.2**: Compile workload allocation model (WAM) data in preparation for e-WAM implementation in CSIS-Lero.

Academics wishing to challenge the distribution of work can do so informally with the HoD or Dean or formally in accordance with UL's grievance procedure. Information regarding use of this is not available for confidentiality reasons.

(vi) Timing of departmental meetings and social gatherings

UL policy states that workloads should be 'contained within socially acceptable working hours'. CSIS and Lero@UL meetings are normally scheduled between 10h00-16h00. Lero staff are sometimes required to attend evening events, for example, dinners with national Lero stakeholders. These are added to calendars well in advance. We will continue to schedule decision-making meetings to suit the majority of committee members while taking family commitments into account.

Social gatherings are scheduled both during and outside working hours. CSIS events, to which Lero@UL staff are invited, are held twice per year, normally at lunchtime, in a restaurant on campus. CSIS staff meet informally before fortnightly department meetings. Lero social events include CSIS academics who are Lero members and are normally held three times per year. One event is a summer day trip, open to Lero members nationally – we have been known to climb hills in the Burren or to visit local historical sites! There is a Christmas dinner held in the evening and a lunchtime event once a year, where people bring food celebrating their home country. For informal socialising, we host weekly Lero@UL coffee

Social events have changed in 2020 due to COVID-19. UL has been closed since mid-March. CSIS has held online bi-weekly department meetings and Lero@UL hosts social online meet-ups, where individuals have been presenting information about their home towns and countries. PI/FIs meet with their research teams every fortnight.

(vii) Visibility of role models

Nationally and internationally, and since the embedding of AS within UL, we have become more conscious about ensuring that women are visible as role models in a national and international setting.

CSIS-Lero hosts many workshops, speakers and conferences and is now offering opportunities for younger female researchers to play a visible role in their research community. For example, at the International Design Research Symposium, 2018, [redacted] (M) from CSIS, as organising chair, ensured that 36% of the organising committee was female. At keynote debates, one of three moderators was female, and 71% of debaters were female. Within CSIS and Lero@UL, we hold speaker series and have ensured over 50%F speakers in each of the past two years.

We have worked to ensure that our web pages reflect female and male students, checking that we are highlighting stories about both women and men. For example, on the web pages of our undergraduate courses which attract school leavers, we now feature videos of 2F and 2M students. We organise that presenters at open-day stands and those doing school visits are gender balanced. Our most recent schools event had nine speakers (5F, 4M), including 1F company CEO (keynote).

At the annual Lero industry day, all researchers, including PGs, present their research to industry visitors, and females have equal opportunities to discuss their research. At our recent event, 32% of poster presentations were by women; 28% of workshop leaders and 36% of panel members were female. Lero15, a 2020 digital marketing campaign celebrating 15 years of Lero, showcased 15 researchers at varying stages of their careers, (8F 7M).

Photograph redacted.

Figure 5.6.6 Dr Fayola Peters, a former CSIS-Lero researcher, now working in [redacted], as featured in the Lero15 campaign

In May 2018, Lero was declared winner of the 2018 award for industry collaboration by the global IEEE Computer Society. For the presentation, we requested that all Lero researchers present would jointly collect the award. This provided all researchers, female and male, with a platform visible to the international software community.

Lero industry award presentation

Female researchers in CSIS-Lero are regularly invited to participate in the organisation of major conferences internationally, including the International Conference on Software Engineering (the most prestigious conference in our field), the International Conference on Global Software Engineering, and SOFSEM on the Theory and Practice of Computer Software. However, at an international level, we continue to be concerned at the low numbers of women involved in programme committees, organising committees and as keynote speakers. We will highlight gender balance as an issue in these cases (**Action 11.3**).

Goal 11: Distribute workload fairly, with respect also to gender and work/life balance.

- **Action 11.3**: Influence the gender balance of national and international committees.

(viii) Outreach activities

Within CSIS, the focus of outreach activity is communicating information about our programmes to potential students through open days and school visits. At AS workshops, current students spoke about outreach in schools and their own experience.

> *"I think outreach to secondary school children and primary school children is the best thing that could possibly be done."*

"I know a lot of girls' schools don't think that programming is a 'woman's subject'."

Consequently, we have identified the need to highlight female role models and to focus on girls' and mixed schools. In the past two years, 75% of our visits, by 50%F, 50%M, have been to these schools. Open-day participation by academics and researchers in 2020 was 30%F, 70%M, ensuring that potential students see women as role models. We invited women from Johnson & Johnson, who are funding a WiSTEM^{2}D project in Lero, to participate at these open days. When students are involved (not possible in 2020 as open days were online due to COVID-19), we now ensure that we have at least 40% F/M participating. We will continue to profile female role models at such events.

Through the CSIS ICT Learning centre, we run Cybercamps, aimed at secondary school students.

Table 5.6.6: Attendance at UL Cybercamp and Cybercamp PLUS, held for 15-17 year-old secondary school students – no camps in 2019-2020 due to COVID-19

Year	F	M	%F	**Total**
2016/2017	32	100	24%	**132**
2017/2018	34	80	30%	**114**
2018/2019	39	78	33%	**117**
Total	**105**	**258**	**29%**	**363**

We have participated in the UL I-Wish programme 2019 and 2020, which promotes STEM to transition year girls (40 attendees per year). We will continue to participate in such workshops and plan to give 20 scholarships to girls and 20 DEIS (Delivering Equality of Opportunity in Schools) scholarships in each of the forthcoming four years (**Action 2.5**).

[redacted] (F) represents CSIS-Lero on the networking group, INGENIC, whose purpose is to support HEIs in promoting computing courses nationally. CSIS-Lero staff speak at school-focused events run by S&E and organisations such as CWIT (Connecting Women in Technology) and WITS which students attend.

We are conscious that while it is important to involve female students in initiatives, we cannot overload individual students in these roles. We will support students, female and male, who do participate, to apply for the UL President's Volunteer Award (**Action 2.6**).

Within Lero, there is an Education & Public Engagement (EPE) programme, which is a key process indicator measured by SFI. Personnel from both CSIS and Lero@UL participate in EPE activities which complement the outreach undertaken within CSIS. This focuses on developing a technical pipeline by educating the next generation of software students and professionals. In 2019, 38% of Lero members participated in the EPE programme (33%F). In Lero@UL, female participation rate was 55%. This is higher than the 19%F academics, researchers and PhD students in Lero@UL. We will monitor this to ensure that EPE load is balanced between women and men (**Action 11.4**).

Lero EPE developed an education suite built around Scratch, a programming language for learner programmers.

Table 5.6.7: RoI Scratch competition participants

Year	F	M	%F	**Total**
2015-2016	250	153	62	**403**
2016-2017	266	303	47	**569**
2017-2018	204	298	41	**502**
2018-2019	275	292	49	**567**

We started an annual Scratch competition for primary and second-level children, which is now led by the Irish Computer Society with Lero continuing to be part of the organisation. This initiative has been successful in promoting programming to girls. The number of female participants is quite balanced with a female participation rate of 49% for 2018-2019. We ensure that judging panels, consisting of both CSIS-Lero and external personnel, are always gender balanced (at least 40% of each gender).

Photograph redacted.

[redacted] *CSIS-Lero researcher, presenting prizes at the RoI Scratch competition*

Following on from the Scratch initiative, Lero was instrumental in the development of the RoI national Junior Certificate Short Course in Coding and Computer Science. Lero research data for the relevant professional development programme shows a 44%F and 56%M teacher participation rate. To recognise students for their performance, we presented schools with UL achievement awards through an online event in 2020. Two students and a teacher were asked to attend; in mixed schools, we requested that 1F/1M student attend. Taking the opportunity to present female role models, three graduates (2F, 1M) and 1F company CEO spoke at the event. In the future, at this event, we will highlight the role of women in IT, giving potential students the opportunity to meet with female academics and researchers.

While we have many outreach and EPE activities, our AS analysis has highlighted that we do not track whether people who attend our activities enrol on our computing courses. We have anecdotal evidence from a local company that, in their interviewing for a Women in STEM scholarship, over 70% of applicants state that a 'women in STEM' intervention, such as a talk by a female in school or attendance at in-house events, was their primary reason for taking up a STEM subject. [redacted] PI on the Johnson & Johnson WiSTEM^{2}D programme, within which she will run a national survey of STEM students to understand whether our activities are having an effect on their career choices. This project includes a particular focus on computer science/software engineering.

HEI figures show that the number of women on ICT courses is increasing nationally. We are proud of the role that CSIS-Lero plays in this. However, while more women are choosing ICT as a subject, there has been little effect on proportions. Therefore, we will continue with our strategic outreach activities.

Goal 2: Increase the number of female students on CSIS courses.

- **Action 2.5**: Provide scholarships for girls and those attending DEIS schools through the Information and Communications Technology Learning Centre.
- **Action 2.6**: Develop and implement an information strategy to ensure that CSIS students are aware of the UL President's Volunteer Awards.

Goal 11: Distribute workload fairly, with respect also to gender and work/life balance.

- **Action 11.4**: Ensure EPE load within Lero is balanced fairly between women and men.

Section 5 word count: 7,831

8 Action plan

CSIS-Lero action plan responsibilities		
Abbreviation	**Title**	**Person Responsible**
AS SAT Chair	AS SAT Chair	[redacted]
AS SAT VC	AS SAT Vice-Chair	
CDs	Course Directors	
CSc	Chief Scientist, Lero	
EOM	Education and Outreach Manager, Lero	
FI/PIs	Funded Investigators/Principal Investigators	
FYP Co-ord	Final Year Project Co-ordinator	
HoD	Head of Department	
ICT LCM	Information & Communications Technology Learning Centre Manager	
LD	Lero Director	
Lero Exec	Lero Executive Committee, chaired by LD	
LIFM	Lero International Funding Manager	
Line Managers	All those who have people reporting to them directly	
LM	Lero Mentor Manager	
OM	Operations Manager	
PhDSup	PhD supervisors	
PI Rep	Representative from CSIS-Lero PIs	

Priority	High	Medium	Low

#	Action	Rationale	Owner	Specific actions	Start date	End date	Success measure
Goal 1: Continue to embed Athena SWAN in CSIS-Lero.							
1.1	Write and approve AS CSIS-Lero SAT terms of reference.	There is a need to (a) formalise terms of reference and (b) rotate and expand SAT membership, to ensure that members are representative of the department.	AS SAT Chair	(a) Develop terms of reference. (b) Approve terms of reference at department meeting.	March 2021	December 2021	Terms of reference have been approved. Membership changes by 40% minimum every 2 years. SAT gender balance reflects department gender balance.
1.2	Establish a formal annual review of the AS action plan.	A mechanism for recording regular (annual) activities and holding datasets is needed.	AS SAT Chair	Hold a formal dedicated SAT meeting to review implementation of the action plan over the previous year, as well as any amendments or proposed amendments to the plan.	December 2021	December 2024	Action plan has been reviewed at a SAT meeting annually. 80% of actions have been completed as scheduled. Review has been adopted at a full departmental meeting.

				Prepare an annual implementation report for presentation to the S&E AS SAT.	December 2021	December 2024	Implementation report has been presented to the S&E AS SAT.
1.3	Ensure that adequate resources are available to successfully implement the action plan.	Funding is required in order to undertake the key AS actions identified.	HoD/LD	Allocate [redacted] from CSIS and Lero. Seek additional funding from UL as necessary.	January 2021	June 2021	Budget has been secured.
				Incorporate AS activities into WAM.	October 2021	June 2022	AS activities are incorporated into CSIS WAM.
1.4	Host an Athena SWAN action plan implementation workshop.	This is to ensure that all members of CSIS-Lero are aware of actions and our plans for the next four years.	AS SAT Chair	Organise CSIS-Lero Athena SWAN workshop, to include discussion on workplace culture.	February 2021	March 2021	80% of staff attend AS workshop.
1.5	Undertake a staff equality, diversity and inclusion survey every two years.	It is important to collect feedback regularly from staff and to monitor progress as	AS SAT VC	Review the survey instrument at an AS meeting, taking account of previous feedback/experience/evolving good practice.	January 2022 *and* January 2024	June 2022 *and* June 2024	80% of CSIS-Lero staff have completed survey (in 2022 and 2024). Survey report has been presented to

		actions are implemented.		Deploy the survey, analyse results and present a written report to CSIS-Lero.			departmental meeting. Ensuing agreed actions have been incorporated into the departmental planning cycle and CSIS-Lero AS planning.		
1.6	Conduct (taught and research) student focus groups every two years.	It is important to collect feedback regularly from students and to monitor progress as actions are implemented.	AS SAT VC	For each of our 3 student cohorts (UG, PGT, PGR): Review focus group questions and update as necessary, to take into account previous feedback/experience/ evolving good practice. Conduct the focus groups, analyse results and present a written report to CSIS-Lero.	October 2022 *and* October 2024	December 2022 *and* December 2024	Minimum of 2 representatives from each taught course are involved in focus groups. 20% of research postgraduates are involved in focus groups. Survey report has been presented to departmental meeting. Ensuing agreed actions have been incorporated into the departmental planning cycle and CSIS-Lero AS planning.	September	Revised focus gr questions endor SAT meeting.

Goal 2: Increase the number of female students on CSIS courses.							
2.1	Implement promotion of CSIS undergraduate courses to women in MSAC/DARE/HEAR groups.	Women in these groups have not been targeted by CSIS, although students from these routes account for 24% of CSIS enrolments.	CD LM121 CD LM122	Guided by a similar initiative in UL CS department, publish case studies of female UGs who have previously entered CSIS courses via MSAC/DARE/ HEAR.	July 2021	December 2021	Minimum of 1 case study per programme has been published on the CSIS website.
2.2	Investigate the introduction of a new interdisciplinary course in CSIS.	Evidence shows that female enrolment on interdisciplinary courses is higher than on other courses.	HoD	Convene a team, who will report to a department meeting, to investigate the introduction of a new interdisciplinary course.	January 2021	December 2021	Report on potential interdisciplinary course has been presented to CSIS department meeting. Decision has been made on whether we should progress development of an interdisciplinary course.
2.3	Investigate why women perform better than men in UG courses and take action to improve the degree outcome of men.	Female students are more likely to receive a higher level of award (H1/H2:1) than male students.	AS SAT Chair	Identify factors which could influence degree attainment (e.g., study skills, results prior to enrolment), conduct an	March 2022	December 2023	Factors which influence degree attainment have been identified. Report on the effect these factors have on CSIS UG student

				investigation into the effect of these, and present a report for action to the department.			performance has been presented to department. Actions have been identified and included in the department plan.
2.4	Develop promotional materials targeting women to consider registering for the MSc in Artificial Intelligence.	Only 7% of the first cohort of LM719 students were women. Artificial intelligence is a growth area in CS in which there should be opportunities for all.	CD LM719	Modify LM719 marketing materials to include gender-balanced images of women.	July 2021	December 2021	All LM719 marketing materials include gender-balanced images of women.
				Publish case studies of female LM719 graduates.	July 2021	December 2021	2 case studies have been published on the LM719 website.
2.5	Provide scholarships for girls and those attending DEIS schools through the Information and Communications Technology Learning Centre.	The aim of this action is to highlight to girls and those in DEIS schools the potential of a career in computing.	ICT LCM	Provide scholarships to girls and to those in DEIS schools for ICT camps.	January 2021	December 2024	20 scholarships per annum are given to girls. 20 scholarships per annum are given to those attending DEIS schools.

2.6	Develop and implement an information strategy to ensure that CSIS students are aware of the UL President's Volunteer Awards.	Participation in this UL award initiative would reward students for their participation in outreach initiatives.	AS SAT VC	Develop a strategy which can be implemented annually.	October 2021	March 2022	At least 5 female and 5 male students receive the UL President's Volunteer Award each year for their participation in outreach activities.
Goal 3: Increase the number of registered female PhD students in CSIS-Lero.							
3.1	Establish collection of application/offer/ acceptance rates for PhD students.	There are currently no data available.	PI Rep	Document the current PhD application data, following which we will develop a process for implementation in CSIS-Lero.	July 2022	March 2023	Process which can be used to collect data on application/offer/ acceptance rates for PhD students has been developed.
3.2	Target women to apply for PhD positions.	Numbers of female PhD students in CSIS-Lero are 15% less than the national average of 20% in our field.	CSc	Gender-proof advertisements for PhD opportunities using gender proofing software (e.g., Gender Decoder).	January 2021	December 2021	All advertisements are gender proofed.
				Publish case studies of CSIS-Lero female PhD	January 2022	June 2022	Minimum of 2 case studies have been

				students and graduates.			published on CSIS/Lero websites.
						June 2023	40% of PhD applications are from women.
3.3	Target female 4th year and MSc students individually regarding PhD opportunities in CSIS-Lero.	Female students need specific encouragement to progress to PhD studies. 93%F from the 2019-2020 cohort received H1/H2.1 degrees, yet we only have 15%F PhD students in CSIS-Lero.	PI Rep	Identify all female 4th year and MSc students who are on track for 1st /2.1 honours degrees and link them to FI/PIs who have funding or potential funding for PhD students.	January (annual)	March (annual)	*Shown as 2021 / 2022 /2023 /2024:* Minimum of 50% / 75% / 100% / 100% of 1st/2.1 honours female students have been contacted by an academic. 1 / 3 / 5 / 5 CSIS female students have commenced PhD study.
3.4	Present female 3rd year students with bursary opportunities in CSIS-Lero.	Female students need encouragement to apply for bursary opportunities.	AS SAT VC	Convene a meeting of female 3rd year students at which bursary opportunities are presented by a female academic.	April (annual)	September (annual)	*Shown as 2021 / 2022 /2023 /2024:* Minimum of 50% / 75% / 90% / 90% female 3rd year students have attended a bursary meeting.

							1 / 3 / 5 / 5 CSIS female students have received a bursary.
Goal 4: Learn from those leaving CSIS-Lero.							
4.1	Work with HR to ensure that all staff who leave are issued with the UL online exit survey.	Exit interviews are not undertaken; therefore, we do not have a means to identify issues affecting those who leave.	AS SAT Chair	HR issues an online exit survey. Produce a report summarising exit interviews held in the previous 12 months. Identify relevant action items.	October 2021	December 2021	100% staff leaving CSIS-Lero are being offered exit interviews. Report is discussed annually at CSIS-Lero meeting with actions identified included in the annual AS review.
Goal 5: Promote the recruitment of women and men to positions in CSIS-Lero.							
5.1	Create a CSIS-Lero requirement so that only those who attend interview skills training can sit on a selection board.	The percentage of women appointed to researcher positions (10%) in CSIS is not in line with applications (22%). Only 2M and 1F have undertaken interview skills	HoD	Selection board members attend interview skills training.	January 2022	June 2022	Requirement is established in CSIS-Lero whereby only those who have attended interview training can sit on a selection board. 100% of selection board members have completed interview skills training and 100% of chairs have

		training; no-one has undertaken interview chair training.					attend interview chair training. Percentage of each gender appointed to CSIS-Lero positions is in line with application gender percentage.
5.2	Submit a Senior Academic Leadership Initiative (SALI) application.	The most recent professorship position advertised had no female applicants.	HoD	Form a SALI team in CSIS to develop an application for submission.	April 2021	December 2021	1 SALI application has been submitted to final round in 2021.
5.3	Appoint one female adjunct professor annually.	CSIS-Lero has no adjunct professors. This is a route we can use to increase the profile of women.	HoD	Identify candidates and follow UL procedures to make this appointment.	Annually in October	Annually by March, starting 2022	1 female adjunct professor has been appointed annually.
5.4	Establish and implement a process to target potential applicants of under-represented genders for CSIS-Lero positions.	29% LABs, no SLs, 25% RF and 1SRF are women. While these figures are comparable nationally and internationally (UK, USA), we	HoD/LD	Set up a CSIS-Lero committee to develop and implement this process.	July 2021	March 2022	100% advertisements for positions in CSIS-Lero are gender proofed. Panel of minimum of 5 potential female candidates has been drawn up and these

		need to improve the academic pipeline. 87%M applied for each of the most senior administrative positions. Only 24%M applied for a junior administrative position.					contacted for 100% of available academic, researcher, senior administrative and technical positions in CSIS-Lero. Panel of minimum of 5 potential male candidates has been drawn up and these contacted for 100% of available junior administrative positions in CSIS-Lero.
Goal 6: Support new employees.							
6.1	Implement a process to ensure that all new CSIS-Lero employees attend UL induction training within their first three months.	Those who have not attended UL induction training have reported that it was “not clear who I should contact to find information”.	AS SAT Chair	AS SAT to identify and implement an induction training process.	March 2021	December 2021	Induction training process has been approved by the department and distributed to all line managers. 90% CSIS-Lero starters attend UL induction training within their first 3 months.

6.2	Offer mentorship to new CSIS-Lero employees.	New employees, particularly contract researchers and TAs, have indicated that mentorship would be useful to them when starting their jobs.	HoD/LM	Assign a mentor to each new starter in CSIS-Lero, to meet with them monthly over the first six months.	January 2021	December 2023	100% CSIS-Lero starters have been offered a mentor.
6.3	Establish a procedure by which all new employees have quarterly meetings with their line manager for the first year, culminating in a PDR.	This is a UL requirement during probation, and is currently only being undertaken with academic appointees in CSIS-Lero.	AS SAT Chair	AS SAT to identify and implement an introductory meeting process.	March 2021	December 2021	An introductory meeting process has been approved by the department and circulated to all line managers. 100% new CSIS-Lero employees have 3-monthly meetings in their first year.
Goal 7: Prepare all staff for progression, promotion, job evaluation and career opportunities.							
7.1	Promote industry-based careers to researchers.	No researcher stated an industry position as a career goal, although 47% of	AS SAT Chair	Add two case studies which present industry-based research projects, to the	July 2021	December 2021	2 case studies presenting industry-based research projects are published on the CSIS and Lero websites.

		Lero researchers move to industry.		CSIS and Lero websites.			
				Organise a presentation from an industry-based PhD holder promoting the role of PhD researchers in industry.	Annually in January	Annually in June	1 presentation per year by an Industry-based PhD holder is given to PhD students and researchers. As reported in the biennial survey, 30% of researcher respondents have expressed interest in a career in industry.
7.2	Lobby UL management for the re-introduction of job evaluation for PMSS.	PMSS have no opportunity to benefit from any promotion with the suspension of job evaluation by the DES.	HoD/LD	Discuss the lack of job evaluation at S&E management meetings every six months.	March 2021	December 2023	Job evaluation lobbying nationally continues to be done by the UL Executive Board.
7.3	Initiate a process to track the development of training, career and personal development plans during all CSIS-Lero PDRs.	Academics stated lack of support, knowledge and confidence relating to promotion;	AS SAT Chair	AS SAT to identify a process to track the development of plans during CSIS-Lero PDRs.	January 2022	December 2022	A process to track the development of plans agreed during PDRs has been approved by the department and circulated to all line managers.

		Researchers and PMSS need to be prepared for career opportunities.					100% of PDR records show that training, career and personal development plans have been developed.
7.4	Provide portfolio feedback from senior members of staff for those applying for progression, promotion, job evaluation and career opportunities.	Academics stated lack of support relating to promotion; Researchers need to be prepared for career opportunities; PMSS have not had experience in doing job evaluation portfolios in the past two years.	HoD	Identify annually senior members of staff to review portfolios. Provide names of reviewers to applicants.	July 2022	December 2024	100% of those applying for progression, promotion, job evaluations and career opportunities have had the opportunity to receive feedback from a senior colleague in CSIS-Lero. 60% of those who submit to progression, promotion and job evaluation are successful.
7.5	Ensure that there is an awareness by CSIS-Lero academics of the UL portfolio committee, who will review portfolios.	Academics stated lack of support relating to promotion.	AS SAT VC	Distribute information on the UL portfolio committee annually.	July 2021	December 2024	100% of those applying for progression or promotion have had the opportunity to receive feedback from a senior colleague in CSIS-Lero.

							60% of those who submit to progression and promotion are successful.
7.6	Actively promote HR researcher development courses to research staff.	Attendance on these courses by CSIS-Lero researchers has been low.	Line Managers	Identify and discuss courses at PDR.	July 2020	December 2023	80% of researchers have attended at least 1 HR researcher development course.
7.7	Encourage mentoring in CSIS-Lero.	The staff survey has shown that the majority of respondents would like a mentor, and have not had one.	Line Managers	Identify and discuss mentoring opportunities at PDR.	July 2021	December 2023	100% of those who want a mentor have applied to the UL mentoring scheme.
7.8	Develop an information pack on how CSIS-Lero implements career progression supports, including sabbatical, research and professional development leave.	Data collection indicated that people are not aware of the various policies and departmental supports including sabbatical, research and development leave.	AS SAT Chair	AS SAT to identify and develop an information package for CSIS-Lero staff on how CSIS-Lero implements career progression supports.	January 2022	June 2022	An information pack on supports for career progression has been circulated to all CSIS-Lero staff. As reported in the biennial staff survey, 80% of staff are aware of UL, CSIS and Lero supports for career progression.

7.9	Develop an information pack clarifying CSIS-Lero implementation of UL leave policies.	Only women have taken parental leave.	AS SAT Chair	AS SAT to identify evelop an information pack clarifying CSIS-Lero implementation of UL leave policies.	July 2022	December 2022	An information pack on UL leave policies has been circulated to all CSIS-Lero staff. As reported in the biennial staff survey, 80% of staff are aware of UL leave policies.
Goal 8: Ensure training, career and personal development for all staff.							
8.1	Implement a process to ensure that staff and PhD students take unconscious bias training and dignity & respect training.	Not all staff have undertaken these training courses; PhD students have never been asked to take this training, although they have similar research and teaching responsibilities. The staff survey revealed that individuals are experiencing and noticing	AS SAT Chair	AS SAT to establish a process to ensure that staff and PhD students attend unconscious bias training and dignity & respect training courses.	January 2021	June 2021	The process to support unconscious bias training and dignity & respect courses has been communicated to all CSIS-Lero staff. Double the number of staff who have completed unconscious bias training and dignity & respect training. 100% PhD students have completed unconscious bias training and dignity & respect training.

		favourable/ unfavourable treatment, particularly PMSS.					
8.2	Establish a CSIS-Lero process to ensure that training plans for all staff are developed during PDR and subsequently implemented.	Low numbers are taking training courses; staff are not aware of career opportunities outside of progression and promotion.	AS SAT Chair	AS SAT to establish a process regarding training plan development.	July 2021	December 2021	Information on the training plan development process has been circulated to all CSIS-Lero staff. 100% of staff who complete PDR have had training plans implemented.
8.3	Actively promote leadership courses to relevant staff.	Low numbers are taking leadership training courses – 11%F and 16%M.	Line Managers	Identify staff whose career development would benefit from leadership courses. Offer support to staff for attendance at courses.	January 2020	December 2023	All relevant staff have undertaken at least 1 leadership course.
8.4	Encourage LBBs and researchers to complete the Graduate Diploma in Teaching,	The Graduate Diploma is important for LBB	HoD	Identify LBBs whose career development would benefit from Graduate Diploma in Teaching,	January 2021	December 2023	All relevant staff understand the importance of the Graduate Diploma.

	Learning and Scholarship.	promotional prospects.		Learning and Scholarship.			
8.5	Assign an academic mentor to each TA.	TAs are not currently provided with support when they join CSIS.	HoD	Identify senior member of staff to be academic mentor for TAs.	Annually in July	Annually by September	All TAs are given academic mentorship.
8.6	Commission a report to identify reasons why women are not receiving similar grant amounts to men and take actions based on the results.	Men receive 2.2 times more grant value per individual than women.	LIFM	Work with a consultant to identify a research process, and action the report when it is received.	January 2021	June 2021	Budget has been provided. Report has been completed and discussed at Lero Executive. Action plan has been developed.
Goal 9: Improve availability and effectiveness of PDRs for all CSIS-Lero staff.							
9.1	Ensure that all staff do PDR training .	35% of CSIS-Lero staff have not attended PDR training – thus, PDRs are not as effective as they should be.	HoD/LD	Present training opportunities to those who have not undertaken PDR training.	January 2021	December 2021	90% of current staff have completed PDR training.
				Include PDR training as an integral part of new staff induction.	January 2021	December 2024	100% of new staff have completed PDR training.

9.2	Require all those who are supervising employees to attend PDR and other management training.	Only two line managers (10%) have completed PDR management training – thus, PDRs are not as effective as they should be. Line managers have not availed of other management training.	HoD/LD	Mainly through PDR, present training opportunities to those who have not undertaken training.	January 2021	December 2021	100% of those supervising employees have attended PDR management training. 80% of those supervising 3 employees or more have attended at least 1 other management training course.
9.3	Implement the UL process whereby all staff, whether permanent or on contract, will be offered annual PDRs to identify personal career development plans.	Staff, particularly TAs and researchers, have not been offered PDRs annually.	Line Managers	Schedule and hold annual PDR meetings.	January 2021	December 2021	100% employees, including contract staff (TAs, researchers, PMSS), have been offered an annual PDR. 80% employees undertake annual PDR annually.
9.4	Maintain statistics on researcher PDRs.	We do not track statistics on researcher PDRs.	CSc	Collect statistics on researcher PDRs annually.	Annually from October	Annually in December	Statistics on researcher PDRs are presented to HoD / LD annually.

Goal 10: Provide support to current students.							
10.1	Promote understanding of co-operative education opportunities to 1st and 2nd year students.	Early year students want to meet role models from more senior years.	CDs	Organise 4th year students to give talks about co-op opportunities to 1st / 2nd year students.	Annually from January 2022	Annually by March	2 (1F and 1M) 4th year students have given a presentation to 1st / 2nd year students each year. Talk recordings are available on the CSIS website.
10.2	Promote understanding of industry careers from CSIS courses to 3rd year, 4th year and postgraduate students.	Senior year students want to meet role models from industry.	FYP Co-ord/ CDs	Organise industry talks from recent graduates for 3rd year, 4th year and postgraduate students.	Annually from October 2021	Annually by December	2 (1F and 1M) speakers from industry have given a presentation to 3rd / 4th year students each year. Talk recordings are available on the CSIS website.
10.3	Provide information about UL career supports to CSIS students.	Students expressed that they are not aware of career supports in UL.	AS SAT VC	Add links on CSIS web pages to UL career supports.	July 2021	December 2021	Links to UL career supports are available on CSIS web pages.
10.4	Discuss timing of English language writing courses with the	International students have difficulty in attending language	CDs	Discuss timing of language writing courses with the International Education Division.	July 2021	September 2021	Language timetables have been modified so that they do not clash with course timetables.

	International Education Division.	writing courses due to timetable clashes.					
10.5	Develop an orientation package for taught postgraduate students to introduce modules, CSIS culture and assessment types.	International taught postgraduate students find the transition to UL difficult.	AS SAT VC with CDs	Develop information on modules, CSIS culture and assessment types for taught postgraduate students.	March 2022	September 2022	Information on modules, CSIS culture and assessment types is available on the CSIS website.
Goal 11: Distribute workload fairly, with respect also to gender and work/life balance.							
11.1	Ensure that family commitments are considered when staff are required to work outside normal working hours.	Staff have been required regularly to reorganise childcare.	HoD/LD	Discuss caring responsibilities when individuals are asked to work extra hours.	January 2022	December 2022	As reported in the biennial staff survey, no member of staff has been required regularly to reorganise childcare.
				Schedule decision-making meetings within working hours.	January 2022	December 2022	75% of committee members have been involved in decision making annually.
11.2	Compile workload allocation model (WAM) data.	There is no WAM used in CSIS-Lero, although there is a UL	HoD	Working with the CSIS-Lero WAM sub-committee, identify WAM data (to include: Athena	July 2021	June 2022	WAM data has been approved at department meeting.

		requirement to do so.		SWAN activity; grant proposal writing).			WAM data is available for eWAM implementation in CSIS.
11.3	Influence the gender balance of national and international committees.	This action is required to address the low numbers of women involved in programme committees, organising committees and as keynote speakers.	Researchers	Discuss this issue whenever it arises.	July 2022	December 2023	In the biennial survey, 50% of researchers report having had success, however small, in bringing about change in gender balance at national/international level.
11.4	Ensure EPE load within Lero is balanced fairly between women and men.	More women than men are currently doing EPE.	EOM	Where volunteers are requested, target those who have not reached their required EPE load. Ensure gender balance for EPE events.	January 2022	December 2023	The EPE load in terms of gender balance is equivalent to the numbers of F/M in Lero.