sMCs

STATISTICAL METHODOLOGY AND COMPUTING SERVICE

Report of Activities
1 September 2014 to 31 August 2015

2014-2015

Statistical Methodology and Computing Service
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Introduction

Introduction

The SMCS continues its development towards a diversified service provider and locator in the area of practical statistics. The main occupation and vocation remains research at UCL. At the same time, collaboration with external entities and consortia is growing. By now, the SMCS evolved into a consulting and training unit of almost 6 full time equivalents of consulting staff and a hub connecting a wide network of more than 20 other specialists in data collection, processing, analysis, and interpretation at UCL. A remaining weak point is that only 2 full time equivalents are on ordinary university budget. Yet after the latest rounds of negotiations, one additional full time equivalent seems secure until the end of 2017. This is sufficient to cover the core support in consulting, training, and computing, whereas the remaining personnel is funded externally.

The current report focuses on the year 2014/2015 but also gives a summary over the past three academic years. Today, the SMCS stands for more than 400 consulting requests, 35 courses, 600 course participants and 1400 person-days of training per year. This workload represents the current capacity limit.

As pointed out by the members of the users' committee, the SMCS is still not sufficiently visible to the potential beneficiaries. This can also be seen by the effect of adding regular office hours at the Woluwe site in spring 2015. Since then, the number of requests from this site and in particular from the De Duve institute, where the office is located increased substantially. The more regular presence also helped in identifying training needs and as a consequence a short session on sample size calculation was organized - it was very well attended. Increasing visibility and presence will therefore remain high on our agenda in 2015/16. On the other hand, higher visibility and presence will lead to a further increase in demand and we will have to look for ways to increase efficiency by anticipating and grouping of similar requests.

With respect to joint research projects, the SMCS has been a partner in the Metabiose study on metabolomics. Moreover, members of the SMCS have participated in a joint project within the SSH sector to improve knowledge in survey methods. This project develops practical training modules and sets up basic infrastructure for interview surveys. The trainings were very well attended and had to be repeated.

Since April 2015, the SMCS has been deeply involved in Erasmus+OLS, a large scale language testing and on-line training program organized by the European Commission and subcontracted to the consortium UCL-CLL-Altissia. SMCS contributes by analyzing the data related to test results, test validation, and participant satisfaction.

A new project beginning in 2015/16 is the development of an intensive course for graduates in humanities in practical data management, analysis, and interpretation. This project is a close collaboration with the LSBA and will lead to a certification as 'Junior Data Analyst'. We hope that such an additional qualification will help these graduates in developing their talents in interesting careers. The design of this program itself, which requires a close collaboration between LSBA, SMCS, the life-long-learning department, and interested companies and organizations, will allow us to get a much better view on what market and the participants need respectively.

Finally, our collaboration with the FOREM continues for another three years. Again, our intervention consists of an intensive course in biostatistics for people with degrees or experience in the biosciences who either lost their jobs or had problems in starting a career and who are looking for additional qualifications.

As said earlier, the challenges for the SMCS in 2015/16 will be to become more visible and to be able to deal with the additional requests which will come from this increased visibility. Moreover, we have several ongoing or starting projects which are very interesting from a methodological point of view.

Your input, assistance, support, and curiosity will be greatly appreciated.

Enjoy reading,

Christian Ritter

President of the management committee.

News

News

Organization

The management committee (comité de gestion) met twice, the first time still under the old statutes, the second time already under the new ones. The new statutes (règlement d'ordre intérieur, ROI) give the management committee a more precise definition, composition and mission. At the first meeting under the new statutes, Christian Ritter was elected as president for a three year term. In the future, there will be at least two meetings per year, one dealing with treasury and perspective, the other with activity reports and more detailed planning.

The new statutes are available for consultation for UCL-members: http://www.uclouvain.be/reglements.html.

Since the year 2014 was a transition year from one set of statutes to another and since coordination of dates was difficult, the users committees of the sectors did not meet officially although individual contacts with most of their members occurred.

As already planned in 2014, a new organization for the meeting of the users committee was decided and implemented in 2015. It consists of an afternoon of case study presentations open to the public followed by the official meeting restricted to the official representatives or their substitutes.

Personnel

The SMCS hired a new biostatistician, Sabrina El Bachiri, who mainly works on projects from health sciences (SSS sector) and help with trainings in the related areas.

Statistical Software

The Big5-Stat initiative is now operated by the central computing service (SGSI) and the SMCS only maintains the role of an observer.

Overall, the initiative seems to work well, even though we sometimes receive reports of unusually long waiting times. Most of these cases can be traced back to misunderstandings or peculiarities of the university organization.

The new organization of the management and users committee should provide a better forum to find long-term systematic solutions to these problems.

Administration and Miscellaneous

The development of the new database to handle consulting requests, course involvement and related statistics started in spring 2014 and first tests of the training modules were planned in February 2015. Due to unforeseen circumstances, this development has been delayed. We hope to be able to start the database in early 2016.

Once in service, this database will be integrated with a newly developed reporting tool to make the routine and annual reporting of our services a lot faster and efficient.

People

People

Management and Administration

Director: Nathalie Lefèvre

President of Management Committee: Christian Ritter

Administrative support: Tatiana Regout

Consultants

Céline Bugli
(UCL/IMMAQ/SMCS – 0.8 EFT)

Main areas of activity: Medical Sector (SSS), Science and Technology Sector (SST), services for external clients.

Doctor of Science – Statistique, Institut de Statistique, Université catholique de Louvain, Louvain-la-Neuve, Belgium, 2006
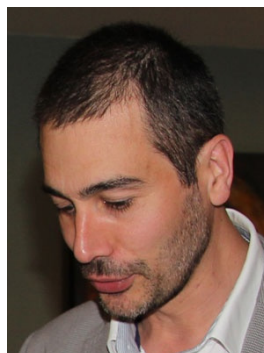
Master (DEA) in Statistics, Institut de Statistique, Université catholique de Louvain, Louvain-la-Neuve, Belgium, 2003

Ingénieur Civil en Mathématiques Appliquées, Université catholique de Louvain, Louvain-la-Neuve, Belgique, 2001

Alain Guillet
UCL/IMMAQ/SMCS – 1 EFT)

Main areas of activity: Medical Sector (SSS), and statistical computing.

Master professionnel Sciences, Santé, Technologie, mention Mathématiques et Applications, spécialité Ingénierie Mathématique, Université de Nantes, 2005

DEA en informatique, Université de Nantes, 2004

Nathalie Lefèvre
(UCL/IMMAQ/SMCS – 0.4 EFT and UCL/IPSY – 0.5 EFT)

Main areas of activity: Humanities Sector (SSH) and University Administration.

Master en Statistique, Institut de Statistique, Université catholique de Louvain, Louvain-la-Neuve, Belgique, 2007

Doctorat en Sciences psychologiques, Université catholique de Louvain, Louvain-la-Neuve, Belgique, 2003

Licence en Psychologie et en Sciences de l'Education, orientation psychologie expérimentale Université catholique de Louvain, Louvain-la-Neuve, Belgique, 1992.

Arnaud Pollaris
(UCL/IMMAQ/SMCS – 1 EFT)

Main areas of activity: Humanities Sector (SSH) and services for external clients.

People

Master en Statistique, Institut de Statistique, Université Catholique de Louvain, Louvain-la-Neuve, Belgique, 2011.

Master en sciences psychologiques, à finalité spécialisée, Université catholique de Louvain, Louvain-la-Neuve, Belgique, 2009.

Catherine Rasse (UCL/IMMAQ/SMCS – 0.8 EFT)

Main areas of activity: Science and Technology Sector (SST).

Master (DEA) en Statistique, Faculté universitaire des Sciences agronomiques, Gembloux, Belgique, 2007.

Ingénieur agronome, orientation Génie rural, Faculté universitaire des Sciences agronomiques, Belgique, Gembloux, 2001.

Matthieu Van Pachterbeke
(UCL/IMMAQ/SMCS – 0.6 EFT)

Main areas of activity: Humanities Sector (SSH) and University Administration.

Doctorat en sciences psychologiques, Université catholique de Louvain, Louvain-la-Neuve, Belgique, 2011.

DEA en sciences psychologiques et en sciences de l'éducation, Université catholique de Louvain, Louvain-la-Neuve, Belgique, 2007

Diplôme de gestion et administration des entreprises, Université catholique de Louvain, Louvain-la-Neuve, Belgique, 2004

Licence en Sciences Psychologiques Université catholique de Louvain, Louvain-la-Neuve, Belgique, 2003

Sabrina El Bachiri (UCL/IMMAQ/SMCS – 1.0 EFT since September 2014)

Main area of activity: Health Sciences Sector (SSS).

Master en Statistique (UCL 2013).

Master in Biomedical Sciences (ULg and ULB, 2011).

Associated Consultants

Associated consultants are professors or consultants who collaborate with the SMCS on trainings and consulting projects but who are not formally SMCS staff.

People

Professors

Bernadette Govaerts (UCL/IMMAQ/ISBA)

Main areas of activity: Industrial statistics, bio-informatics.

Catherine Legrand (UCL/IMMAQ/ISBA)

Main areas of activity: biostatistics.

Christian Ritter (UCL/IMMAQ/LSBA)

Main areas of activity: Industrial statistics, statistical computing.

Consultants at other institutes

Jonathan Dedonder (UCL/IACCHOS)

Sébastien Fontenay (UCL/IMMAQ)

Nathalie Lefèvre (UCL/IPSY)

Aline van Maanen (Institut Roi Albert II - Cancérologie et Hématologie)

Researchers and Research Assistants

Manon Martin

(UCL/IMMAQ/SMCS and ISBA)

Masters in Biostatistics, Institut de Statistique, Université catholique de Louvain, Louvain-la-Neuve, Belgium, 2014.

Main activity: Collaboration in a research project on metabolomics (ISBA, ULg) and consultancy in related questions (SSS and SST).

Others

Moreover, some researchers and doctoral students of the ISBA participate in the consulting and training activities of the SMCS. This gives them an opportunity to gain valuable experience in practical statistics.

Interns

Maud Minsart, February-March 2015. Participation in consulting activities in the biostatistics area.

Leila Nombo, April-July 2015. Participation in Erasmus + project.

Workshop Instructors

The following list gives the names of the persons who contributed to the training and consulting activities of the SMCS. This includes SMCS and associated consultants, other members of the ISBA, visitors, and external trainers.

Jérome Ambroise (IREC), Maïlis Amico (ISBA), Aurélie Bertrand (ISBA), Céline Bugli (SMCS), Vincent Bremhorst (ISBA), Joris Chau (ISBA), Jonathan Dedonder (IACCHOS), Sébastien Fontenay (IRES), Bernadette Govaerts (ISBA), Alain Guillet (SMCS), Anna Kiriliouk (ISBA), Nathalie Lefèvre (SMCS), Catherine Legrand (ISBA), Arnaud Pollaris (SMCS, Catherine Rasse (SMCS), Christian Ritter (ISBA), Sylvie Scolas, Cédric Taverne (ISBA), Nathan Uyttendaele (ISBA), Aline Van Maanen (Institut Roi Albert II - Cancérologie et Hématologie), Matthieu Van Pachterbeke (SMCS), Sam Waltener (FUSL), SAS Institute trainers.

Training

Training

This is one of our main missions. In general, we focus on hands-on training in practical statistics and the use of statistical software in ways which are not covered by regular university courses.

The SMCS offers the following types of training:

- Regular SMCS trainings: 2-3 day courses (once or twice per year) on commonly used statistical and associated software at UCL (SPSS, R, SAS, SAS Enterprise Guide, JMP, Lisrel, Stata, NVivo, Excel, Limesurvey).

- Customized trainings for specific audiences (UCL and external). Examples: 'Analyser la médiation modérée avec SPSS' (taught by A. Pollaris), 'Exploration de données et bases de modélisation statistique avec JMP (for GSK Vaccines, Belgium) taught by C. Rasse, 'R on the cluster' (in collaboration with CISM) taught by N. Uyttendaele, Initiation aux modèles d'équations structurales (SEM) avec STATA taught by A. Pollaris and J. Dedonder. In general, the clients pay for the preparation of specific course modules or examples.

- Courses sponsored by the Walloon government agencies in the context of BioWin, a project to enhance the competitiveness of health related enterprises in the Walloon region. Courses offered within this framework are centrally advertised and course fees are partially subsidized.

- In partnership: courses taught in collaboration with SAS. Some annual or special courses qualify for sponsoring from SAS. The course 'Formation SAS: SAS advanced programming' belongs to this category.

- Lunch sessions (Midis du SMCS): short (1-3h) informal demonstrations of statistical methods or software of particular practical interest.

- SMCS is also regularly invited to sessions organized by other entities. For example, De Duve seminar on the "Statistical analysis for the article: *Monoclonal antibodies against GARP/TGF-B1 complexes inhibit*

the immunosuppressive activity of human regulatory T cells in vivo" held on April 1st 2015.

Table 1 shows that the SMCS taught 37 courses in the academic year 2014/15 for a total of 112.5 teaching days. The strong increase in the number of days in 2013/14 comes from a single course of 34 days (BioInformatics) which is given as a part of a FOREM training package. The course was given also in 2014/15. Moreover, 6 more courses are given in 2014/15 leading to a new increase in 2014/15.

Table 1. Global statistics on SMCS trainings.

	2012/13	2013/14	2014/15
Courses	36	31	37
Course Days	67.5	95.5	112.5
Participants UCL	422	297	450
PersonDays UCL	710	574	837.5
Participants Ext	110	122	164
PersonDays Ext	243	634	619

Table 2 shows the number of participants from the three sectors.

Table 2. Number of participants per sector.

	2012/13	2013/14	2014/15
SSH	177	135	161
SSS	67	38	115
SST	101	47	60
Master's Students	76	76	112
Central services	1	1	2

Participation increased in all three sectors with respect to the year 2013/14. The highest increase was observed in SSS. The latter is due to several modifications of our training program. Using our stronger presence at the Woluwé site, we better explored the needs of the public and in particular of members working at least partly at the University Hospital, St. Luc. In general, we organized more sessions at Woluwé and arranged them at more convenient schedules than before. A half-day session on sample size calculations was particularly well-attended. In 2015/16, the needs of the SST sector should be reviewed.

Table 3 (SSH) shows that the statistics training program reaches the entire sector.

Training

Table 3. Origin of participants from the humanities sector (SSH).

SSH	2012/13	2013/14	2014/15
SSH	**210**	**174**	**206**
IACCHOS-ISPOLE-ESPO	68	47	54
ILC	11	15	34
ILSM-LSM	8	18	9
IMMAQ	34	15	8
INCAL-FIAL	3		6
IPSY-PSP	52	34	48
JURI-DRT		5	2
RSCS-TECO	1	1	
Masters students	33	39	45

Table 4 (SSS) confirms the wide reach of the SMCS trainings into the entire sector including its administration.

Table 4. Origin of participants from the health sciences sector (SSS).

SSS	2012/13	2013/14	2014/15
SSS	**74**	**40**	**135**
ASS		1	1
BIFA			3
DDUV	1	2	30
IONS	3	8	17
IREC-MEDE-FSM	28	9	27
IRSS-FSP	20	9	14
LDRI-FASB	4	7	14
Cliniques	11	2	9
Masters students	7	2	20

Table 5 (SST) shows small increase in participation from the institutes ELI which accounted for the highest participations in the academic years 2011/12 and 2012/13 but decreased slightly in 2013/14. As expected, in 2014/15, a considerable number of doctoral researchers trained earlier have finished their theses and a new generation of researchers need training.

Table 5. Origin of participants from the science and technology sector (SST).

SST	2012/13	2013/14	2014/15
SST	**137**	**82**	**107**
AGRO	9	6	6
ELI	42	22	31
EPL	1		
ICTEAM	4	6	2
IMCN	3		1
IMMC	1		1
ISV	13	8	7
LOCI	17	1	9
SC	11	4	3
Masters students	36	35	47

Overall, the training activity of the SMCS occupies about 2 full time equivalents of personnel. Half of this effort is directly oriented towards the UCL research and teaching units, the other half towards external clients, such as the FOREM, BioWin, BioPhare, and some private enterprises and public administrations.

The trainings given to external clients fulfill two objectives. First, they are a part of our mission of service to society. Second, they allow us to develop new course modules for internal use, such as the FOREM training which allowed us to assemble an entire course cycle in the area of bio-informatics. These course modules can then be very interesting for members of the life and health sciences groups in either SST and SSH.

Finally, members of the SMCS are occasionally participating in sessions of the course on statistical consulting (LSTAT3220) where they tell the students about their career path and their way of working. This is well appreciated by the students who can find out more about what it is like to be a statistician in practice.

Consulting

Consulting

This is another of our main missions. We help researchers, administrators, and external clients in collecting meaningful data and in interpreting them.

Whenever possible, we provide methodological assistance to enable our clients to solve their problems by themselves. This can be just a piece of *advice* or a short *assistance*. This type of consultancy is pre-paid by the financial contributions of the sectors.

On occasion, the complexity or the amount of the statistical work requires that the SMCS consultant spends a larger amount of time on a project. The consultancy thereby evolves into *collaboration*. This requires additional funding by the client. Moreover, if the input of the statistical consultant yields new insight, common publishing rules require that he/she should become a co-author of publications based on the work.

Table 6. Origin of consulting projects

Client split	2012/13	2013/14	2014/15
Research	339	261	318
Master's projects	81	86	87
External clients	7	9	7
Central services	10	9	12
Total	**437**	**365**	**424**

From 1 September 2014 to 31 August 2015, the SMCS worked on 424 projects (365 in 2012/13) of which 417 came from UCL (356 in 2012/13). As expected, most of the projects concerned university research. Some larger projects involving the university administration and external clients are shown in the section Larger Projects.

The following tables present the breakdown of the origins of the projects in the three university sectors. They show clearly that the SMCS services reach almost all areas of research at UCL.

Table 7 (SSH) shows that the number of request from the humanities sector fluctuates around 170 requests per year. As in previous years, the institute and the school of psychology had by large the highest share. This is why these units employ a 50% statistical advisor (Nathalie Lefèvre, who in the remainder of her time acts as the

managing director of the SMCS). Also IACCHOS has an internal specialist for data matters (Jonathan Dedonder) who is associated member of the SMCS. Besides these two subject areas with particularly high activity, requests came from almost all units of the sector, including law and theology. Only the institute for philosophy has not yet requested assistance from the SMCS.

Table 7. Origin of consulting requests from the humanities sector (SSH).

	2012/13	2013/14	2014/15
SSH	**190**	**159**	**159**
IACCHOS-ISPOLE-ESPO	29	28	30
ILC-INCAL-FIAL	23	14	10
ILSM-LSM	12	11	14
IMMAQ	10	4	7
IPSY-PSP	112	97	95
JURI-DRT	3	2	
RSCS-TECO	1	3	3

Table 8 (SSS) shows that on average there are a bit more than 100 requests per year from the health sciences sector. The areas related to clinical research and the medical school account for about 60% of this, IRSS and IONS for most of the remainder. Requests from the drug research institute and the De Duve institute increased since the SMCS started regular office hours on site. Some projects also originated from the central administration.

Table 8. Origin of consulting requests from the health sciences sector (SSS).

	2012/13	2013/14	2014/15
SSS	**126**	**101**	**139**
ASS	4	1	1
DDUV-Ludwig Institute	5	2	12
FASB	1	4	
IONS	21	9	28
IREC-MEDE-FSM	70	65	72
IRSS-FSP	17	13	10
LDRI	3	5	9
Cliniques - Albert II	5	2	7

Finally, Table 9 (SST) shows that the numbers of requests for 2012/13, 2013/14 and 2014/15 were at a similar level. Our main consultant for the science and technology sector (SST), Catherine Rasse, continues to be a member

Consulting

of an ethics committee related to experimentation on animals.

Table 9. Origin of consulting requests from the science and technology sector (SST).

	2012/13	2013/14	2014/15
SST	**108**	**93**	**113**
AGRO	10	6	13
ELI	50	45	44
EPL	1	1	
ICTEAM	3	2	2
IMCN	5	3	
IMMC	7	1	2
ISV	25	29	43
LOCI	2		5
SC	5	6	4

Overall, the SMCS treats on the order of 400 consulting requests per year. The average duration per consulting request is about 4 hours. This relates to an approximate work load of 1600 consulting hours. A typical consulting hour corresponds to about 1.5 to 2 real hours which means that the consulting activity currently occupies about 1.5 EFT of the SMCS team. Approximately 1 EFT of this is related to the basic consultancy service, the remainder to requests which take longer and which are commonly funded separately, either by UCL researcher and administrators or by external clients.

The statistics shown above do not concern large scale external projects documented in later section of this report.

Computing

Servers and Statistical Software

The SMCS maintains two servers, a statistical computing server and a software sharing server for smaller or single user. Moreover the SMCS works together with the SGSI and the CISM on several activities to reduce barriers to using appropriate statistical software for university members.

Statistical Computing Server

Our performance server is a dual Intel Xeon X5675 processer based system with 96 GB or RAM and rapid (SAS) disks for a total of 2100 GB. Moreover, a Tesla GPU cards C2075 is available for highly parallelized linear algebra calculations. This server system and its storage are hosted by the CISM (UCL high performance computing platform) who is in charge of the operating system and the user management. The SMCS takes care of the statistical software on these machines. Currently, SAS, R and Stata-MP are available. The system is scheduled for renewal in fall 2015.

The statistical computing server was mainly used by people from IMMAQ, IRSS and ELI (the table 4 provides more details about the users of the two servers). Users may be divided in two categories: people who want to use SAS for free in the big5-stat project and people in need of a high performance computer mainly for the three installed software packages (large RAM and multi-processors version). The average CPU charge was 12% on smcs1 and 7% on smcs2 with both spikes (50% for smcs1 and 60% for smcs2) occurring when users execute paralleled programs in Stata or R. More data analysts at UCL should consider using this server system. It offers more performance, storage, and data security than local PC-based systems.

Software Sharing Server

Our second system is a Windows terminal server which hosts smaller statistical applications like HLM, Lisrel, MPlus, PASS, and UCINET. The idea behind this service is resource sharing. Some specialized statistical programs are initially purchased and used by single individuals or work groups. However, use may be limited and these programs may also be of interest to other researchers at

UCL. So, instead of installing them on local systems we promote an installation on our terminal server, as long as the license permits it. We can give the main user priority access while allowing others to use the program when it is available. The software sharing server also allows hosting statistical software which is no longer used but which has to be kept for follow up or future work.

Access to the sharing server was opened in late 2010 to people who agreed to experiment with using statistical software on a remote computer. There are now 31 users (18 from SSH, 9 from SSS and 4 from SST) so less than the previous but this can be explained by the fact for the first time even people with a login had to register again. The high number of users from SSH is expected since some of the installed programs come from IPSY. We encourage other university members to contribute statistical software for their own use and for the benefit of others.

This server is scheduled for stop in the 2015-16 academic year and will be replaced by Ucilla (see hereunder).

Available Software

Via the Big5-STAT initiative, any UCL member can request the installation of or the access to one or several of the five most used statistical software packages, R, JMP, SAS (via Enterprise Guide), SPSS, and Stata. The request should be made via the central computing service desk 8282 or better via "Catalogue de service" (cf. https://www.uclouvain.be/477533.html). 819 UCL members used this service (360 from SSH, 179 from SSS, 86 from SST and 194 for which we don't know the sector)

In case of hardware incompatibility, there is a solution via a web portal (Ucilla).

High performance solutions in SAS, R and Stata (multi-processor) are available on the statistical computing server.

The software sharing server currently hosts HLM, Lisrel, MPlus, nQuery, PASS and UCINET. HLM was paid by IPSY, the others by the SMCS except for UCINET that is free.

Finally, Ucilla already offers the big5 softwares, SPSS Premium, nQuery and Simca and will soon host PASS, Minitab and probably MPlus. All but Simca are paid by the SGSI; Simca is paid by the professor B. Govaerts.

Computing

The access conditions and procedures for the statistical computing server and the software sharing server are available under the Servers tab of our official web page www.uclouvain.be/smcs.html.

Usage Statistics

Table 10. Users of the statistical computing server.

User origin	2012/13	2013/14	2014/15
Total	**106**	**105**	**96**
SSH	**51**	**50**	**46**
IACCHOS-ISPOLE-ESPO	4	6	7
ILC	1	2	0
ILSM-LSM	4	2	6
IMMAQ	32	34	27
IPSY-PSP	10	6	6
SSS	**21**	**21**	**23**
DDUV	1		
IONS			4
IREC	4	6	3
IRSS	16	15	15
LDRI			1
SST	**34**	**34**	**27**
ELI	27	21	13
ICTEAM		2	2
IMCN		1	
IMMC	1	1	
IRMP	1	1	
ISV	4	5	5
LOCI		1	
AGRO			4
EPL	1	2	1
SC			2

Table 11. Users of the software sharing server.

User origin	2012/13	2013/14	2014/15
Total	**38**	**47**	**33**
SSH	**33**	**41**	**20**
IACCHOS	3	4	2
ILC			1
ILSM-LSM	1	1	2
IMMAQ	9	10	8
IPSY-PSP	20	26	7
SSS	**5**	**6**	**9**
IONS			4
IREC	2	2	2
IRSS	2	3	2
LDRI	1	1	1
SST	**0**	**0**	**4**
ELI			1
ICTEAM			1
ISV			1
SC			1

Help for students

Students sometimes need help to install a statistical software package on their own computers to prepare exercises or to make a project. The SMCS helps them to do it since the course assistants or professors don't always know what went wrong during the installation.

Last year, the platform helped 124 students of which 103 came for assistance with SPSS. This suggests that the available information for installation may not yet be sufficient.

Larger Projects

Larger Projects

Survey Project - IBPT

During the academic year 2013/14, the SMCS finished its work on a three year contract with the Belgian telecommunications regulator IBPT-BIPT. The objective of this project was to survey the Belgian population about their knowledge about the Belgian telecommunications market and in particular to which extend they were aware of favorable offers and on ways to switch service providers.

During this project, the SMCS joined forces with a small survey company to develop questionnaires in French and Dutch, prepared the sampling frame, worked with the Belgian National Register of Persons to send out the questionnaires and collect the answers, used OCR to acquire the data, tabulated the results and submitted annual reports to the client (the reports are publicly available at the web site www.ibpt.be).

The IBPT project corresponded to an effort of about 0.3EFT during the duration of the project.

The interest of participating in this collaboration was to gain practical experience in the entire survey process and to learn more about the Belgian telecommunications market.

Survey Support

The Survey Project is an initiative of the humanities sector SSH to facilitate the design and implementation of surveys. It has two components: methodology and infrastructure.

With respect to methodology, the SMCS collaborated with other UCL experts to identify and prepare training material. The resulting training sessions were very well attended and had to be repeated. They will be further adapted to the needs of the public.

Simply the fact that the participants in these courses meet the UCL experts in survey practice is helpful. The participants then know who to ask for help when planning a survey (questionnaire construction, sampling and analysis). It also facilitates the work of our associated consultants in the Humanities Sector who can then anticipate analysis and follow-up needs. The consultants can also alert the participants about training needs and potential statistical pitfalls of the intended survey design or analysis.

Set up with SSH support, the Survey Project now helps SSS and SST sectors as well. It is an example of how a service such as the SMCS can help identify cross disciplinary needs and assist in creating joint approaches for dealing with them.

Research Project - Erasmus+OLS

In spring 2015, the SMCS became partner in the European project Erasmus+OLS. It is a seven year project to provide on-line language support to several hundred thousand participants of Erasmus+ programs. The language support consists of a testing platform to determine the level in the work language of the host institution at the beginning and the end of the stay and of an on-line learning platform.

Our role in this project is to monitor the performance of a progressive on-line test (a test in which the difficulty of later questions depends on the answers to earlier ones), to assist in the design and realization of customer satisfaction surveys, to facilitate communication of performance statistics, and to provide expertise to the scientific committee.

During the last months, several consultants and associated consultants were involved in the project. We expect to continue with an average involvement of 0.5 EFT over the duration of the project.

Research Project - Metabiose

In collaboration with ISBA, the SMCS participates in a research consortium on Metabolomics (Metabiose). In this consortium, a research group at the University of Liège is responsible for the medical and analytical aspects and the ISBA/SMCS works on the data analysis and interpretation methodology. For this purpose, the ISBA/SMCS hired a research assistant to work at the SMCS

Larger Projects

offices. This arrangement assures that the researcher has a suitable work environment including computing assistance and resources, and that the SMCS can benefit from the acquired know-how with respect to analyzing OMICS data.

Course Module - FOREM

Since 2011/12, the SMCS provides a course in Bio-Informatics for the Walloon career center, FOREM. This course is aimed at people who have degrees in the bio-sciences but who are having problems in finding a suitable job.

Originally, the course volume was 19 days. It has since then increased to 33 days (corresponding to more than 200 hours of lectures and accompanied exercise sessions).

The results are quite encouraging as most of the former participants are quickly finding interesting work. Since the volume of this course is substantial, we submitted a proposal to associate an accredited certificate with it. Moreover, the course modules developed for this training program will be made available to UCL researchers.

Course Modules - BioWin

The SMCS is also providing short course modules in the context of the BioWin initiative of the Walloon government. This type of collaboration is currently under revision due to budget constraints. This will probably mean that our trainings will no longer be viable as exclusive sessions for government sponsored job seekers. We will therefore try to open them up to a larger public while reserving a certain number of places for participants sent by BioWin.

Meeting - BSS2014

Last but not least, the SMCS joined ISBA in organizing the 2014 annual meeting of the Belgian Statistical Society. SMCS members participated actively in the local organizing committee, contributed significantly to a new and innovative format of the conference, helped with selecting the poster presentations, and established links with the FLAMES organization in the Flemish region.

Your Project?

As you can see from the above report, we are prepared and ready to become partners in research projects and grant applications. Don't hesitate to contact us.

We can provide an early estimation of the amount of statistical work needed in your project, plan important stages of this work, and give an outline of the statistical methodology which would be employed.

The advantages of involving us in the early stages include a more thorough study design, efficient allocation of resources and methodologies, and data which are easier to analyze and interpret.

The benefits are higher research efficiency and more credibility towards the granting authorities and scientific journals.

Appendix

Appendix

2014-2015

List of Trainings

- Formation en analyse de données et statistiques pour la recherche et le développement dans la bioindustrie (en collaboration avec le Forem Formation Biotechnologie à destination des demandeurs d'emploi), 34 jours de formation, de septembre 2014 à janvier
- Introduction to R language: 3 jours, du 1 au 3 septembre 2014, de 9h30 à 15h30 (In English) (A. Guillet)
- Plans d'expérience avec JMP (en collaboration avec Biophare à destination de UCB): 6 demi-journées les 8, 9 et 10 septembre 2014, de 9h à 17h (C. Bugli & C. Rasse)
- Pratique de la statistique avec SPSS: 5 demi-journées, du 8 au 12 septembre 2014, de 9h30 à 12h30 (N. Lefèvre et J. Dedonder)
- Formation SAS : programmation de base : 4 demi-journées, les 21 et 28 octobre 2014 (formateurs SAS Institute)
- Initiation au logiciel Nvivo: 3 demi-journées, du 13 au 15 octobre 2014, de 9h30 à 12h30 (J. Dedonder et N. Lefèvre)
- Data management and analysis using Stata: 5 demi-journées, du 03 au 07 novembre 2014, de 9h30 à 12h30 (S. Fontenay and A. Guillet)
- Outils statistiques pour le suivi de la qualité de processus de production de composés, dans le cadre de la Maîtrise complémentaire en transfusion: 1 demi-journée, le 25 novembre 2014 (B. Govaerts)
- Panorama des statistiques à l'UCL: 1 demi-journée, le 12 novembre 2014 (M. Van Pachterbeke et J. Dedonder)
- Réalisation d'enquêtes: 4 journées, les 19, 20, 26, 27 novembre 2014 (M. Van Pachterbeke, J. Dedonder et A. Pollaris)
- Training program in Clinical Study - Biostatistics (Cours ClinET - Biowin): 3 journée, les 28 novembre, 1er et 2 décembre 2014 (C. Bugli et S. El Bachiri)
- Analyser la médiation, la modération et la médiation modérée avec SPSS: 2 journées, les 11 et 12 décembre 2014, de 9h30 à 16h30 (A. Pollaris et N. Lefèvre)
- Cours d'initiation à SAS pour les chercheurs (collaboration avec l'école doctorale BCMB): 5 demi-journées, du 17 au 19 décembre 2014 (S. El Bachiri et C. Bugli)
- Introduction à la réalisation d'enquêtes en ligne avec LimeSurvey: 2 demi-journée, le 17 décembre 2014, de 9h30 à 16h30 (M. Van Pachterbeke et N. Lefèvre)
- Cours d'initiation au langage R: 5 demi-journées, du 12 au 16 janvier 2015, de 9h30 à 12h30 (En Français)(V. Bremhorst et A. Kiriliouk)
- Pratique de la statistique avec SPSS: 5 demi-journées, du 5 au 9 janvier 2015, de 9h30 à 12h30 (N. Lefèvre et J. Dedonder)
- Initiation au logiciel Nvivo: 3 demi-journées, du 2 au 4 février 2015, de 9h30 à 12h30 (J. Dedonder et N. Lefèvre)
- Introduction to R language (Woluwe): 3, 10 and 17 February 2015 from 9:30 to 16:00 (J. Chau and N. Uyttendaele)
- Analyses multivariées en Rcommander: 4 demi-journées, les 02 et 03 février 2015, de 9h à 17h (C. Taverne et M. Van Pactherbeke)

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- Data exploration and bases of statistical modeling with JMP (en collaboration avec Biophare à destination de GSK): 4 demi-journées les 30 et 31 mars 2015, de 9h à 17h (C. Rasse)
- Formation SAS : SAS advanced programming: 5 journées les 3, 10, 17, 24 et 31 mars 2015 (Formateurs SAS Institute)
- Initiation aux modèles d'équations structurales (SEM) avec STATA: 5 demi-journées, du 16 au 20 mars 2015, de 9h30 à 12h30 (A. Pollaris et J. Dedonder)
- Plans d'expérience avec JMP (En collaboration avec Biophare): 6 demi-journées, le 19, 20 et 23 mars 2015, de 9h à 17h (C. Rasse)
- Exploration de données et modélisation statistique avec JMP (en collaboration avec Biophare): 6 demi-journées, les 22-23-24 avril 2015, de 9h à 17h (C. Rasse)
- Data management and analysis using Stata: 5 demi-journées (en français), du 13 au 17 avril 2015, de 9h30 à 12h30 (S. Fontenay et A. Guillet)
- Panorama des statistiques à l'UCL: Le 30 avril 2015 de 13h à 15h (M. Van Pachterbeke et J. Dedonder)
- Réalisation d'enquêtes: 5 demi-journées, le 21/04/14 de 13h à 17h, Les 22 et 23/04/14 de 9h à 17h (M. Van Pachterbeke, J. Dedonder, A. Pollaris)
- Introduction à la réalisation d'enquêtes en ligne avec LimeSurvey: 1 journée, le 12 mai 2015 de 9h30 à 17h (M. Van Pachterbeke)
- Introduction aux modèles multi-niveaux avec SPSS: 5 matinées, du 18 au 22 mai 2015, de 9h30 à 13h (A. Bertrand et M. Amico)
- Les plans d'expériences pour la formulation de produits pharmaceutiques: cas types et étapes clés pour les réussir (formation organisée pour UCB Pharma S.A.): Les 04 et 11 mai 2015 de 09h à 17h (C. Rasse et B. Govaerts)
- Première découverte du logiciel SPSS Statistics et coaching spécifique, formation organisée pour le CHU Brugmann: 1 journée, le 8 mai 2015 (A. Pollaris et S. El Bachiri)
- Utilisation avancée du logiciel Nvivo: 2 demi-journées, les 11 et 12 mai 2015, de 9h30 à 12h30 (J. Dedonder)
- Cours d'initiation au langage R (en Français): 5 demi-journées, du 8 au 12 juin 2015, de 9h30 à 12h30 (A. Guillet et V. Bremhorst)
- Plans expérimentaux pour la recherche, le développement et la production industrielle. Formation organisée pour le CRM group les 4-5 et 12 juin 2015 (C. Rasse)
- Pratique de la statistique avec SAS/Enterprise Guide: 5 demi-journées, du 15 au 17 juin 2015 (C. Bugli et S. Scolas)
- Séminaire appliqué sur le calcul de taille d'échantillon : 1 demi-journée, le 30 juin de 9h à 12h (C. Bugli et S. El Bachiri)
- Cours d'initiation au langage R. Formation organisé pour la RTBF: 2 journées, les 13 et 14 juillet 2015, de 9h à 16h30 (V. Bremhorst)

List of Seminars

- «Some important statistical concepts in the design and analysis of clinical trials», Séminaire présenté à l'initiative de Ph. Haineaut (IREC) le 17 octobre 2014 pour les assistants de médecine interne, dans le cadre d'un cycle national organisé par les 7 universités du pays. (C. Legrand)

Appendix

Publications and Presentations by SMCS members

Although the primary mission of SMCS members is to support other research projects, its members are encouraged to participate in scientific meetings, to make presentations, and to publish.

Publications

Spatial and numerical processing in children with non-verbal learning disabilities; Crollen V., Vanderclausen C., Allaire F., Pollaris A., Noël M.-P. ; Research in Developmental Disabilities 47, 61–72 (2015).

Caractérisation des miels produits dans la région steppique de Djelfa en Algérie ; Mekious S., Houmani Z., Bruneau E., Masseaux C., Guillet A., Hance T. ; Biotechnologie, Agronomie, Société et Environnement — Vol. 19, no.3, p. 219-229 (2015).

Oral health determinants and caries outcome among non-privileged children ;   Carvalho J. C., Mestrinho H. D., Guillet A., Pollaris A., Vieira E. O.,Silva E. F., Caries Research — Vol. 48, no. 6, p. 515-523 (2014).

Enquête IBPT (2014) – Télécom, le point du vue du consommateur, IBPT et SMCS, http://economie.fgov.be/fr/binaries/Barometre_de_la_societe_de_l_information_2015_tcm326-269296.pdf.

Presentations

Faster with R! Nathan Uyttendaele.; Applied statistics workshops, February 13, 2015

Posters

The perceptual origin of length and numerosity interaction: Evidence from the Müller-Lyer illusion; Larigaldie N., Andres M., Lefèvre N., Pesenti M., Dormal V.; IPSY day, Louvain-la-Neuve, 2015.

Développer les compétences appliquées des étudiants dans un cours de statistique en grand nombre sans travaux dirigés. Les apports d'un dispositif d'auto-apprentissage en ligne contextualisé ; Lefèvre N., Vincke G., Govaerts B. ; Colloque Francophone International sur l'Enseignement de la Statistique, Bordeaux, January 21-23, 2015.

Master thesis supervision

Simulations et évaluation de méthodes pour l'analyse de médiation ; Macq G. (2015) ; Mémoire en Statistique ; Supervisor : Govaerts B., co-supervisor : Yzerbyt V.

Divers

Participation à la commission d'éthique en matière d'expérimentation animale du Secteur des sciences et technologies de l'Université catholique de Louvain. Rasse C. (2014-2015).

Co-organisor of the annual Belgian Statistical Society meeting in Louvain-la-Neuve, 5-7 November 2014.

Rencontre et échange de bonnes pratiques avec l'équipe de statistique de l'INED ; Lefèvre N. ; Institut National d'Etudes démographiques in Paris, July 2015.

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