

## WASP – Write a Scientific Paper course: why and how

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### ABSTRACT

The ability to write up research in the form of a paper is a crucial requisite for academics. The skills required are manifold and are acquired piecemeal during an individual's training. Matters would be facilitated by a short and intensive course that would cover all of these facets. Such a course would ideally be delivered by experienced writers and editors. It is for this very reason that WASP (Write a Scientific Paper) was created. WASP was held outside of Malta for the first time, in London. This paper describes the preparations required in order to plan and execute a course of this or similar nature.

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### Introduction

The ability to write up research in the form of a paper that can withstand the test of peer review is a crucial and critical requisite for all academics, not only to disseminate their work, but also to further their careers (Coles, 1993). The skills required are manifold and are usually acquired piecemeal during an individual's training (Chipperfield et al., 2010; Schoenwolf, 2013). These skills include seeking out material/s for publication, preparing a thesis proposal, dealing with ethics and data protection committees, along with the ability to prepare a compelling abstract for a conference, an attractive poster and a captivating Microsoft PowerPoint™ presentation. The prospective academic must also know how to lay out a paper, how to perform statistical analyses, which journals to target, the viewpoint of the reader and the journal editor, and how to cope with the peer review process.

Matters would be facilitated if academics had access to a short and intensive course that would cover all of these facets. Such a course would ideally be delivered by experienced writers and editors. It is for this very reason that WASP (Write a Scientific Paper) was created. Furthermore, statistical analysis is often viewed by younger colleagues with trepidation. Thus, in WASP, statistical analysis is taught almost exclusively within the confines of Microsoft Excel™, an environment which is ubiquitous and familiar to all. Excel was also chosen as while the software is not capable of doing complex tests, it handily serves for the simpler and more commonly used tests in the biological sciences.

WASP has been held in Malta almost annually since 2010 (Figure 1), and after each iteration, feedback was used to fine-tune the contents. WASP is

created and managed by the Malta Institute for Medical Education (MIME) which is a faculty of the Institute of Technology, Humanities, the Arts, Medicine and the Sciences (<http://www.ithams.com/wasp>).

WASP was held outside of Malta for the first time, in London, at the Royal College of Paediatrics and Child Health over three days at the end of January 2017. This course was formally endorsed by the College and was allotted 18 international EACCME (European Accreditation Council for Continuous Medical Education) accreditation points. It was then repeated in Malta over another three days at the end of February 2017.

To the author's knowledge, this is the first time that a group of Maltese academics have organised a course of this nature overseas. Moreover, to the author's knowledge, a course of this length and intensity on this topic is novel and unique. This paper describes the preparations required in order to plan and execute a course of this or similar nature.

### Course planning

The course programme over the years was mostly planned and revised by a core of three academics who delivered WASP in London, who were and are journal editors, authors of many papers and contributors to a prestigious postgraduate paediatric mastercourse textbook (Lissauer & Carrol, 2016). Various colleagues also participate in WASP when held in Malta ( $n = 11$  in total) but flights and accommodation for all these for WASP in London would have been prohibitive, so the core team undertook to give the various talks in London.



Figure 1. WASP in Malta February 2017.



Figure 2. WASP in London, January 2017.

Quotes were obtained for room hire from several venues and the cheapest overall was the Royal College of Paediatrics (Figure 2). In order to allow speakers to rest and to alleviate tedium among attendees, it was decided that the main speaker (the author) would alternate talks on the first day with one of the two other speakers and on the second day with the other speaker. All three speakers would arrive in London the day before they were meant to speak in order to have some allowance for flight and travel delays. The two other speakers returned to Malta on the evening of the day of their talks (one night in London each). The author stayed in London for three nights and returned to Malta on the evening of the last day of the course. A suitable hotel within easy walking distance of the College was located. Flights and hotel were booked according to this schedule.

A Maltese trainee in London was located to give a cautionary talk with regard to open access and

predatory journals (Bugeja & Grech, 2015). Firefighting on the fly is integral to any course, demonstrating, as always, that the best laid plans of mice and men often go awry. The main issue that arose was that an additional speaker from Great Ormond Street had been recruited to give three talks pertaining to ethics, data protection, and recruitment and informed consent. However, just before WASP, the lecturer informed us that attendance would not be possible due to unexpected personal reasons. Fortunately, a set of slides had already been prepared and when approached, the Maltese trainee reviewed and modified the slides, and gave the talks herself.

One other talk focused on RefWorks by Proquest since this is the software which the University of Malta faculty and students utilise as the institution's official bibliographic/citation software. RefWorks was deemed a representative example to utilise in order to demonstrate the power of this kind of software. This talk was to be given by a representative of

**Table 1.** Program of Write a Scientific Paper in London.

30/01/2017	
9:00 AM	Registration
9:30 AM	Introduction to WASP
9:45 AM	What can I publish – types of studies
10:15 AM	Which journals to target and why
10:45 AM	Coffee
11:00 AM	Critical appraisal of existing research 1
11:30 AM	Stats 1: Data entry, validation, forms & pivot tables
12:00 PM	Critical appraisal of existing research 2
12:30 PM	Lunch
1:30 PM	Stats 2: Introduction to stats: descriptive/inferential
2:00 PM	Editors' perspectives & dealing with editors
2:30 PM	How not give a presentation
2:45 PM	Coffee
3:00 PM	Plagiarism and ethics of dealing with colleagues
3:30 PM	Stats 3: T-tests, Z-test and ANOVA
4:00 PM	Preparing an abstract
31/01/2017	
9:00 AM	Review
9:15 AM	Stats 4: Contingency tables and relative risk
9:45 AM	Structuring a scientific paper
10:15 AM	Stats 5: Odds ratio, confidence int. for proportions
10:45 AM	Coffee
11:00 AM	Stats 6: Correlation, regression, multivariate analysis
11:30 AM	Preparing a thesis – the differences from a paper
12:00 PM	Stats 7: Meta-analysis
12:30 PM	Lunch
1:30 PM	Writing for the media
2:00 PM	Stats 8: Sample size, survival analysis, NNT
2:30 PM	How to give a presentation
3:00 PM	Coffee
3:15 PM	Dual axis coronary angiography – paper example
3:45 PM	Predatory journals, open access & fees
4:15 PM	Creating a custom spreadsheet
01/02/2017	
9:00 AM	Review
9:15 AM	Ethical approval
9:45 AM	Writing a paper
10:15 AM	Data Protection
10:45 AM	Coffee
11:00 AM	Recruitment and informed consent
11:30 AM	Bibliographic software
12:00 PM	RefWorks
12:30 PM	Lunch
1:30 PM	Statistics Session using delegates' own laptops
2:30 PM	Coffee
2:45 PM	Kleos aphthiton ... Statistics Session cont.

Proquest. However, at a very late stage, it transpired that the Proquest speaker could not attend, so after consultation and discussion with regard to talk content with Proquest, the author gave this talk.

With regard to other costs, the College agreed to review the program for the purposes of endorsement, along with feedback from previous courses. After due deliberation, the College consented to endorse the course and place it on the website, against a fee.

The College also insisted that WASP obtains separate insurance for faculty and attendees independent of the insurance already in place at the College. This was sourced from an insurance company in London and comprised a public liability insurance to cover the costs incurred by claims from members of the public in connection to WASP negligence following WASP involvement with, or organisation of the event. The cover pertains to costs relating to injury, damage/loss of property and even death.

WASP also applied to the Medical Association of Malta (MAM) as the Maltese representatives of EACCME, the Accreditation Council for Continuing

Medical Education. After consideration, the course was allotted 18 international CPD (Continuous Professional Development) points.

For any course to hope to succeed, it must have attendees, and it must therefore be marketed. In addition to the course listing on the website of the College (<http://www.rcpch.ac.uk/courses/wasp-write-scientific-paper>), a web page was created by the author as part of the MIME courses under an ITHAMS subdirectory (<http://www.ithams.com/wasp>). A Facebook event page was also fashioned by a friend of the author, Dr. Justine Bugeja, as well as a Facebook page proper by Ms. Mariella Scerri (<https://www.facebook.com/ithamsmalta>). Program and brochure PDFs were created by the author. After vetting, the course was also placed on the University of Malta website (<http://www.um.edu.mt/newspoint/news/features/2017/02/waspwriteascientificpaper>). All of these were embellished by the creation of a new logo for WASP by a friend of the author, Mr. Mario Caruana (<http://outlook.coop>) as well as the endorsement logo of the College and the logo of EACCME. Separate logos for WASP in Malta and WASP in London were generated by the author by the creation of paintings of skylines of Valletta (Malta's capital city) as well as that of London for incorporation into the generic WASP logo.

Sponsorship was sought and was obtained from three companies: Novalac, Actavis and Proquest. Once arrangements were complete, WASP organisers and faculty contacted all friends and colleagues who might know any individuals who would potentially be interested in attending WASP in London.

The program is presented in Table 1. Many of the titles are self-explanatory. Two separate talks dealt with the art of giving a presentation, focusing individually on how to give and what to avoid during a slide show. The topic was deemed sufficiently important to warrant two separate talks as how a speaker projects and actually comes across among peers is almost as vital as the content of a talk – impressions matter tremendously, an injunction that was strongly imparted to the delegates. The dual axis coronary angiography talk described a paper, a randomised control trial, from start to end, as an example of how a large paper with nontrivial datasets should be handled (Grech, Debono, Xuereb, Fenech, & Grech, 2012). The final talk entitled *Kleos aphthiton* refers to the ancient Greek notion of eternal renown or glory: for a hero to be spoken of in song or poem for all of eternity. The ancients believed that men could only achieve a measure of immortality through heroic deeds that entailed physical trials or mental acts of procreation, up to and including the hero's death. Scholars may similarly attempt to attain a modicum of *kleos* through publishing research which potentially lingers in cyberspace forever. This coda thus

**Table 2.** Anonymous feedback from delegates. Score out of 5 (Likert scale: 1–5 Very Poor, Poor, Fair, Good, Very Good).

WASP in London, Jan 2017						
Speakers	Content	Delivery	Handouts <sup>a</sup>			Talks
Mean	4.6	4.3	5.0			4.6
Std dev	0.6	0.9	0.0			0.7
Venue	Location	Food & refreshments	Presentation facilities	Audio facilities	Amenities	Wi-Fi
Mean	4.8	4.3	5.0	5.0	5.0	5.0
Std dev	0.5	1.0	0.0	0.0	0.0	0.0
Conference overall		How likely are you to recommend this course?				
Mean	4.8					4.8
Std dev	0.5					0.5
WASP in Malta, Feb 2017						
Speakers	Content	Delivery	Handouts <sup>a</sup>			Talks
Mean	4.8	4.8	4.9			4.6
Std dev	0.4	0.5	0.3			0.5
Venue	Location	Food & refreshments	Presentation facilities	Audio facilities	Amenities	Wi-Fi
Mean	4.7	3.6	4.8	4.9	4.5	4.6
Std dev	0.5	1.4	0.4	0.3	0.7	0.5
Conference overall		How likely are you to recommend this course?				
Mean	4.9					4.8
Std dev	0.3					0.4

<sup>a</sup>Excel sheets, datasets, papers.

philosophically alludes to epistemological underpinnings of the research act itself.

All of the presentations were hyperlinked by the author to a main presentation Powerpoint file so as to have smooth transitions between talks and speakers. For this reason, all talks were handed to the author well before the commencement of the course. Projection during the conference was onto a large plasma screen. For the purposes of hardware backup, the author brought a 17" laptop to the venue as well as a Windows™ tablet, both of which contained not only the Microsoft Office™ suite, but also all of the presentations and ancillary materials. The latter two were also available separately on a pendrive and on DropBox.

Prior to commencing, delegates were given a PDF handout that described how to install Excel's™ Analysis Toolpack and how to adjust Excel's™ macro security levels so as to allow the spreadsheet handouts to function properly.

Throughout, all of the statistics talks were hyperlinked to spreadsheets that the author had created or downloaded in order to facilitate his own work. Thus, during each statistics lecture, the author ran statistical analyses using real datasets from his own, previously published work. The statistics portion comprised approximately a third of the overall content. Care was taken to gradually build up the level of complexity of analysis in logical fashion, commencing with basic inferential statistics, before venturing into parametric testing as well as a limited discussion of non-parametric testing. The delegates were also given a link to the excellent and free statistical overview that was published by the British

Medical Journal in 1997, and is available in updated form in book format (Campbell & Swinscow, 2011), and is also available online (<http://www.bmj.com/about-bmj/resources-readers/publications/statistics-square-one>) in the original format. Delegates were also introduced to the concepts of creating bespoke spreadsheets for their own projects along with macro generation, as well as the possibilities of attaching macros to custom buttons.

The potential of Google Forms for surveys, as well as the ability of this mode of surveying to place the results in a spreadsheet, was also demonstrated (<https://www.google.com/forms/about/>). Indeed, this was explained by showing the attendees the feedback form that they would be asked to complete at the end of the course.

At the end of each day, the delegates were emailed a link to a Dropbox folder which allowed them to download each day's talks as PDFs, as well as all of the spreadsheets that were utilised. Additional materials for further reading included papers that overview how to write a good case report (Andrade & Mendhekar, 2010), a good abstract (Andrade, 2011a), and how to undertake or review a randomised control trial (Andrade, 2011b). Furthermore, all of the papers discussed in the course were also made available for download.

Summary feedback from the above-mentioned Google Form is shown in Table 2 for both WASP in London and the following WASP in Malta, and are categorised by aggregate scores for speaker content and delivery, quality of handouts (Excel sheets, datasets, papers, etc.), aggregate score for the talks themselves, scores pertaining to the venue, the overall score for



the course and the likelihood that the course would be recommended by the attendees to others. The results were excellent, with almost all scores exceeding 4.5 (on a Likert scale: 1–5 Very Poor, Poor, Fair, Good, Very Good) and many scores reaching 5. These heartening results have encouraged the organisers to organise two more events in October 2017, one in London and another in Malta.

WASP also sought endorsement from the European Board and College of Obstetrics and Gynaecology (EBCOG). In effect, EBCOG peer-reviewed the course and its contents and this has led to several changes including the creation of a document which lists the learning objectives for each talk given during WASP. This document is available on the WASP website. WASP has also been formally endorsed by the Malta College of Obstetricians and Gynaecologists as well as the Maltese Cardiac Society, the Medical Association of Malta, and The Maltese Paediatric Association.

WASP faculty and organisers hope that this course will not only continue to be held in Malta and in London, but perhaps also be held in other cities.

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No potential conflict of interest was reported by the authors.

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