

PIAT NEWSLETTER

New developments at The John Rylands University Library



The most striking change at the Main Library itself is apparent on arrival! In summer 2009, JRUL began a major refurbishment of the Blue Ground area, resulting in a light and airy new space with a more user-friendly entrance area, a welcoming central Customer Services Desk, automated book returns as well as more self-issue machines, quick-use PCs, a variety of seating areas to suit different learning styles and last but not least, wireless access. The entrance was completed in Summer 2010 and as can be seen from this photograph it provides an efficient but inviting entrée to the library experience.

PIAT students are among those who mainly use the Library's services at a distance: online too, there's lots happening! Athens usernames and passwords have been discontinued – access for most resources is through central username and password, the wording to look out for is Institutional login, UK Access Management Federation or Shibboleth.

The [Library Catalogue](#) moved to a new version on 1 September, improvements include a single search box option (comparable to Amazon and Google, with suggested alternative spellings) – you can then sort the results, find more by author or subject or narrow by site, collection, subject, author, or format (e.g. Electronic Resources).

From My Account in the Library Catalogue, or from the Student or Staff Portal, readers can quickly view and renew loans, make reservations and even submit Document Supply requests.

E-book provision is increasing - a growing range of Pharmaceutical Press publications is now available through MyLibrary (showing as links to Coutts e-books in the Catalogue), and also relevant titles from a range of publishers through Dawsonera.

Twitter announcements from JRUL teams such as Electronic Resources and Medical and Human Sciences are a great way to keep up-to-date on new resources, as well as changes to familiar platforms – recently OvidSP, Wiley Online Library and SpringerLink have all re-launched on a new interface – and also a good place to check for messages about temporary service disruptions and their resolution.

New PIAT Tutor

Rob Walker has recently agreed to update Module 8, Operations Management. Rob has worked for 17 years at CP Pharmaceuticals as QP and was promoted to Company Director, before leaving to act as a consultant. He currently works worldwide, travelling frequently to China, Bangladesh and other Asian sites.

PIAT Visits

I visited Martin Dohnal at Mandeville Medicines (MM) in June. Apart from discussing Martin's dissertation outline, I learnt a lot of interesting facts about Jimmy Saville's help and involvement. He even holds a courtesy flat above MM, his visits corresponding to a strong smell of cigars!

In July I visited Lara Gonzales at the Health Protection Agency at Porton Down, also for her dissertation. The high security was evident and also unseen, apparently it does not appear on Sat-Navs, and it appeared in the wrong place on GoogleMaps.

New External Examiner for Clinical Trials

The previous external examiner for PIAT, Dr David Millson from AstraZeneca was unable to continue in the post due to ill health. His 3 year period in post was due to end very soon and we had already agreed a replacement, Dr Bob Sewell who is in charge of the Clinical Research Diploma/MSc programme at Cardiff University.

Resignation of Nick Clarke



Many of you will have spoken or communicated by e-mail with Nick over the last 2 years. Unfortunately for PIAT he has decided to move to London where his girlfriend works. He has a job at the London School of Economics, administering a Management MSc programme. Janet and I are immensely saddened that he has decided to leave, but fully realise that it is in his best interests, and naturally

wish him all the best for the future (he can of course come straight back if he **can't stand London**). He takes a keen interest in cycling with him, and expects to continue this in London.

PIAT in Scientific Journals

Articles relating to PIAT have been published in three industry specific journals;

- Lockwood, B. "Pharmaceutical Industry Advanced Training (PIAT) – Accredited Professional Development for the Medical and Healthcare Industries". FIP - Industrial Pharmacy. (2010).
- Lockwood, B. "Pharmaceutical Industry Advanced Training (PIAT) – Accredited Professional Development for the Medical and Healthcare Industries". European Industrial Pharmacy. 6, 4-6 (2010).
- Lockwood, B. "Toxicology and Pharmaceutical Industry Advanced Training (PIAT)". European Pharmaceutical Review. 15, 56-57 (2010).

Euromed, the publisher of the two Industrial Pharmacy titles generously included adverts for PIAT in a number of issues of their industrial pharmacy publications.



The Wide Variety of MSc Dissertation Titles

Over 130 PIAT dissertations have been successfully submitted since 1995.

The 60 credit dissertation required for completion of PIAT MScs has been the subject of a vast range of titles, and covers virtually any area in the domain of industrial pharmacy. Some examples of the recent titles include;

- Adaptation of asparaginase assay to micro-plate format – Lara Gonzalez-Ruiz (Health Protection Agency)
- The renoprotective effects of Candesartan in diabetes – Glynnis Williams (AZ, Toronto)
- Optimisation of the bulk granulation solution process – Paraic Ellard (Pfizer)
- Improving process capabilities using Lean Sigma methodology – Peh Eng Chin (GSK, Singapore)
- Qualification and process validation of a heated agitating pan for the decarboxylation of cannabinoids – Graham Lane (GW Pharmaceuticals)

Visitors to the PIAT office can survey the range of subject materials and scientific approaches from the collection of the majority of the dissertations.

Trends in the Therapeutic Area Focus of Leading Pharmaceutical Companies

The selected cohort of Top 20 companies is shown in Figure 1. The rankings, which are based on global sales levels, are taken from the 2008 Scrip 100.

The top 20 include one generics company, Teva. However, this company does have a small R & D portfolio of novel, non-generic projects. The composition of the Top 20 companies in our surveys has changed considerably over the past decade. For example, in 1999, when we analysed the Top 50 companies, Amgen, which is now ranked No. 14, just made the rankings at No. 50. 12 companies that ranked at that time between No. 21 and Amgen at No. 50 are now included in the current Top 20 – usually as part of another company that acquired it. Hence today's Top 20 incorporates some 30 companies in 1999 Top 50 terms, quite apart from other, smaller

	Cardiovascular	Metabolic	Cancer	CNS	Anti-infectives	Rheumatology	Respiratory/allergy	Gastroenterology	Ophthalmology	Vaccines	Dermatology	Transplantation	Anaesthesia	Total
1 Pfizer	1	1	1	1	1	1	1	1	1	1	1	1	1	10
2 GSK	1	1	1	1	1	1	1	1	1	1	1	1	1	9
3 Sanofi Aventis	1	1	1	1	1	1	1	1	1	1	1	1	1	8
4 Novartis	1	1	1	1	1	1	1	1	1	1	1	1	1	11
5 Roche	1	1	1	1	1	1	1	1	1	1	1	1	1	11
6 AstraZeneca	1	1	1	1	1	1	1	1	1	1	1	1	1	10
7 J & J	1	1	1	1	1	1	1	1	1	1	1	1	1	9
8 Merck & Co	1	1	1	1	1	1	1	1	1	1	1	1	1	8
9 Wyeth	1	1	1	1	1	1	1	1	1	1	1	1	1	9
10 Lilly	1	1	1	1	1	1	1	1	1	1	1	1	1	5
11 Bristol-Myers Squibb	1	1	1	1	1	1	1	1	1	1	1	1	1	7
12 Abbott	1	1	1	1	1	1	1	1	1	1	1	1	1	9
13 Boehringer Ingelheim	1	1	1	1	1	1	1	1	1	1	1	1	1	7
14 Amgen	1	1	1	1	1	1	1	1	1	1	1	1	1	8
15 Bayer	1	1	1	1	1	1	1	1	1	1	1	1	1	8
16 Takeda	1	1	1	1	1	1	1	1	1	1	1	1	1	7
17 Schering-Plough	1	1	1	1	1	1	1	1	1	1	1	1	1	9
18 Teva	1	1	1	1	1	1	1	1	1	1	1	1	1	2
19 Astellas	1	1	1	1	1	1	1	1	1	1	1	1	1	10
20 Novo Nordisk	1	1	1	1	1	1	1	1	1	1	1	1	1	2
Total	19	19	19	18	16	15	13	10	7	7	5	5	1	154

companies that were then outside those rankings. Figure 1 indicates the therapeutic areas in which top 20 companies in 2009 are currently active – namely those with at least one project currently in development that has reached Phase II clinical trials or beyond. They appear in order of frequency of occurrence. We found that on average the top 20 companies are represented in 7.65 therapeutic areas. This is very similar to the situation in both 2004 and in 1999, when the average number was 7.75. Any focussing down to a smaller number of therapeutic areas has therefore so far been minimal.

The largest company, Pfizer, is currently represented in ten therapeutic areas. Three other companies – Novartis, AstraZeneca and Astellas – also qualify in ten areas. Only one company qualifies in more areas than this, Roche, with 11. There is no particular correlation between size of company and number of therapeutic areas represented. For example the third biggest company, Sanofi Aventis, is represented in eight therapeutic areas, whereas Astellas, ranked No. 17, is represented in ten. This accords with our previous findings. We can conclude therefore that there continues to be no general consensus amongst leading pharmaceutical companies on breadth of R & D portfolio.

There are three therapeutic areas where 19 out of 20 companies are represented. These are the cardiovascular, metabolic and cancer areas. Not far behind is CNS, in which 18 companies are represented.

Trends over the past ten years for these most heavily represented areas show that **cardiovascular**, **CNS** and **metabolic** have consistently been amongst the most broadly represented. **Cancer** is the only one of these areas whose representation has ever dipped. The number of companies represented for cancer's inclusion dropped from 18 in 1999 to 16 in 2004. This is likely to have been because the intense level of activity in R & D had for some companies not yet been translated into progression of compounds to Phase II. Now, however, 19 companies qualify, indicating that efforts are paying off and anti-cancer compounds are coming through in abundance.

The next most popular area is **anti-infectives**, where we find 16 companies represented today. Although there are fewer companies qualifying than the 18 in 1999, this represents a slight increase since 2004, when only 15 companies qualified. It does suggest that the long-term decline in interest in anti-infectives may have been stemmed. **Rheumatology** follows just behind, a therapeutic area in which 15 companies are represented. This area's representation has been on the rise. In 1999 only 10 companies qualified, but this had increased to 14 by 2004. Rheumatology has been the area benefitting most from the development of monoclonal antibodies, a major factor accounting for this trend. There is then quite a gap down to **respiratory/allergy**, which shows long-term decline. Representation has fluctuated in **gastroenterology**. Ten companies currently qualify. A decade ago there were just eight, but by five years ago this had risen to 14. Industry interest in

gastroenterology R & D declined during the early 1990s, with companies withdrawing from R & D because of the widespread perception that room for appreciable improvement of therapy post-Tagamet, Zantac and Losec no longer existed.

We can at this point also deduce that Merck & Co is the most active company in terms of changes to the therapeutic areas in which it is active. It has entered two new therapeutic areas (cancer & ophthalmology) whilst exiting another two (rheumatology & gastroenterology). At the other extreme, there is neither representation in any new area nor exiting of a previously represented one in two companies, Abbott and Novo Nordisk, indicating a stability of therapeutic area strategy in both companies.

By our assessment, leading pharmaceutical companies continue to be represented in practically as many therapeutic areas on average as they have been during the past decade. Also the number of areas companies no longer qualify for since 2004 is very close to the number they newly qualify for in 2009. Therefore there is no evidence so far for the focussing down by companies that has been expected in some quarters. Perhaps the fact that the pharmaceutical industry is somewhat more concentrated than five years ago has helped to bolster the figures. Another contributory factor could be the general increase in Phase IV trial activity, with products being kept in development for longer post-launch. The absence of any general consensus amongst leading pharmaceutical companies on the ideal therapeutic breadth of an R & D portfolio remains, as found in our previous surveys. Likewise, there is still no evidence of any general rule of thumb linking size of company to breadth of portfolio.

Amongst the Top 20 companies the net effect of trends over the past five years is a reduced emphasis on the already less-researched therapeutic areas. This is much more the result of companies exiting areas rather than failing to qualify for new ones. This finding contrasts with five years ago, when it seemed that the biggest companies in particular were more prepared to conduct R & D in the less researched areas. This may be strategically short-sighted but is perhaps understandable, given that competition in R & D is much less transparent than competition in the market. **There is thus a recurrence of the phenomenon of "Converging Targets" we detected 12 years in our initial, 1997 survey.** The risk for companies is that if they succeed in their R & D endeavours, they stand to face heavier competition than they do currently with the portfolio of products they will then be promoting. Other factors being equal, they will therefore need to compete more strongly than they do currently. This does not square with the trend over the past few years of cutting back salesforces.

Game theory would suggest that if a minority of companies were now to opt to increase their emphasis on the more rarefied therapeutic areas – even if on paper markets in those areas appear commercially less attractive – they could well stand to gain because they would tend to face less intensive competition.

John Ansell, John Ansell Consultancy

PIAT Graduands— Certificate and MSc December 2010

Congratulations!

Martin Dohnal MSc Merit
Martin Kearns Msc Distinction
Rory Phelan MSc Merit
Paul Rooney Diploma Distinction



Decommissioning of a tablet machine – A sorry sight!

The School of Pharmacy & Pharmaceutical Sciences reluctantly disposed of an old Manesty tablet press due to space requirements for a replacement. In order to comply with current regulations, the old machine was removed by engineers and cut in half. The photographs were then kept as a record of complete destruction. The equipment has been replaced by a state of the art Riva single punch Minipress.



Brian Lockwood **Director of PIAT December 2010**