Aggarwal Group Newsletter 2004

Dear All

Welcome to the second edition of our Newsletter. This year a little later than I had originally intended due to some more changes at an administration level, which mean that Rosemary left us in June and was replaced by Mar, who many of you know, in August.

Current Group Activities

As always, we have a big multicultural group, which ensures a constant supply of fresh and innovative ideas, which I believe is the secret to the group's success. In addition to the English contingent, we currently have students and post-docs from Scotland, Ireland, France, Germany, Spain, Mexico, Sweden, Greece, China, and Switzerland.

We are maintaining the tradition of the group day out, started by **Julia Adam** (née **Worrall**) and **Alison Thomson**. This year we walked around Tintern Abbey and the surrounding area, finishing off with the usual game of football and rounders.

Group day out – August 19 2003 – Tintern Abbey Walk



The people who have started their PhD's in Oct. 2003 are **Jie Bi**, from P.R. China; **Christoforos Kokotos**, from Greece; **Martin Lowe**, from Edinburgh; **Graeme Balfour**, who comes to us from Glasgow; **Jose Antonio Morales Serna**, from Mexico and **Matt Unthank**, from Newcastle upon Tyne.

Awards: Congratulations to Chris Astle & Sarah Fulford on receiving the prestigious 2003 Syngenta Scholarship Awards (5 awarded nationally), Sarah Fulford (again!) for one of the prizes at the annual Pfizer poster competition (we have now been awarded at least one prize at this major event every year for the last 3 years – **Marco Ferrara** was our first winner) and **Jeff Richardson** who was selected for the Roche symposium and came away with one of the prizes as well. Finally, at the Department's 2003/4 Pfizer poster competition, **Chris Astle** was recipient of a joint first prize (together with Ana de Andrés Gomez- fiancée of **Chris Sheldon**) and **Sarah Fulford** (again!!) received one of the runner-up prizes.

It was also a good year for publications (see end), so congratulations to the whole team for their achievements.

We welcomed a number of visitors to the group this year for periods between 10 weeks and 7 months. Professor **Peter Somfai** from the Royal Institute of Technology in Stockholm spent his sabbatical leave with us. He was the first academic to spend time with us in this way and contributed much to the group. As in previous years a number of overseas students spent a short period of their PhD in our group. This year we welcomed **Joan Solsona** from Barcelona, **Antonio Salamone** from Bari, and **Daisuke Ohara** from Kyoto. They added much to the lively banter in the labs. With Euro 2004 coming up, and so many Europeans in the group, the banter will no doubt escalate.

News from the group

Congratulations to **Becky Steele** and Lorenzo, (**Alessia Nicotra's** cousin) who will get married on 20th August 2004, and to **Robin Fulton** and Martyn Cole who will marry on 20th July 2004. We look forward to the pictures in due course.

Congratulations also to **Chris Sheldon** who got engaged to Ana de Andrés Gomez in 2003 and we look forward to the announcement of the wedding date in due course.

Positions that current PhD and Post Doc members are moving to in 2003/2004

Crystel Lopin - Maitre de Confirences, Université d'Orleans, France. Jean-Luc Vasse - Maitre de Confirences, Université de Reims, France. Andreas Schmidt – seeking employment in Germany Robin Fulton – lecturer, King's College London. The following group members completed their PhDs (congratulations) and moved on in 2003 (+ early 2004):

Paul Davies – post- doc with Professor Fürstner, Max Planck, Germany.

David Williams – Resolution Chemicals, Harlow.

Becky Steele – Marie Curie Fellowship for post-doc with Cesare Gennari in Milan. Bahareh Tavassoli – GSK, Tonbridge. Chris Sheldon – AstraZeneca , Alderley Park. Imhyuck Bae – Post-doc with Prof. Sukbok Chang in KAIST, Korea (completion of military service).

Leni Ritmaleni – is returning to Indonesia to where she will be a lecturer at Gadjah Mada University and will be starting a family! She will be the youngest Dr. in the department. Others final years are soon to follow (PhD's).

Personal News from Former Members and Varinder

Hainz Ruediger writes: My wife and I have bought a house and just moved in two weeks ago. We are all very happy in our new home in Binzen, Germany. I am still doing the same job in process development at Ciba in Basel. For my first project with Ciba, last November I received the Ciba Specialty Chemicals Research & Development Award 2003. We have developed a new additive to prevent our best red pigment form distorting polymers when incorporated. My job was to develop the plant process as fast as possible.

Rich Williams writes: I left the Aggarwal group over two years ago. I am still working in America for Albany molecular research as a medicinal chemist, which is challenging and fun job! The people over here have helped both me and my wife Lyndsey feel right at home. We are also expecting our first baby next month (due on the 14th Feb), a little girl, which will probably call Keira, but we are still working on that.

Sarah Lively writes: As a contribution to Varinder's newsletter, we have some pretty good news. Peter and I are now the proud parents of a little boy. Robert Edward Lively was born on 26th December 2003, weighing 6lb 8oz. He is a real cutie... except when he's screaming of course... which is not that often.



I'm off work until April but other than that at the same contact details. Still working for Tularik (an American biothech/pharmaceutical company). In 2002 I actually spent 4 months in San Francisco on secondment, which was ace especially as Peter also was able to get a job out there so we were together. We spent every weekend travelling and sight seeing as you can imagine.

Jane Thompson writes: I was in Varinder's group at Sheffield 1992-1994. I am now studying part-time for a PGCE and teach 6 and 7 year olds at an infant school in Sheffield. The teaching is going really well and the science I do there is more at my level! David and I have 2 children: Christopher who is 5 and James who is 2. Between them they keep us extremely busy, especially in summer when they wake at 5.30 every morning!!!

Gary Newton writes: As you've probably gathered, I'm back in the UK from my travels. [Gary spent a year travelling around the world – mostly in Australia and New Zeland]. I have also returned to work for my former employer OSI on a temporary basis covering for somebody who is off ill. It's possible it may get extended but they don't have any permanent positions at PhD level at the moment. Having been away for a while, I thought it was best to take the opportunity to get back into chemistry as it should help me find a more permanent job. I am currently looking for other jobs, as I'm due to finish here in May. **Dr Kevin Lydon** writes: The twins, Ciaran and Joseph are growing up quickly. They are 6 years of age and already learning the art of sarcasm with particular relish. I am certain the get this from their mother. Myself and Caroline have finally married on the island of Jersey on the 22nd August 2003.



Willy Picoul writes: As you may remember, after I left the group I started a second postdoc in Marco Ciufolini's team in collaboration with Pierre Fabre Laboratory, a French company (not so common nowadays...) to work in particular on the elaboration of UV-filter molecules for solar cream ! After one year, I started to work in June 2003 in a company named ABScience as medicinal chemist. This is a small company of biotech in which Marco Ciufolini is involved, and we work, as many others, on inhibitors of tyrosines kinases, in particular against cancer (GIST), mastocytosis and inflammatory diseases. One of our molecules just started a phase I clinical trials. So for the moment. I am still working at the University of Lvon into the laboratory of Pr Ciufolini, but in case the company manages to develop, we may move in Marseille within one or two years. You may also know that Pr Ciufolini has decided to move in the University of Vancouver next July, so the situation is a bit complicated for the moment.

As you probably know, I also work closely with Didier Pez (**Beatrice Pelotier'** husband) who joined ABScience last November, and Beatrice herself just started her position of "lecturer" in a lab very closed to us. We hope **Amaury** will have the opportunity to come in our lab very soon, to join the club of the French exmembers.

From a more personal point of view, unfortunately I have no photos of any wedding or baby to present, but as my girlfriend arrived in Lyon last November, I have good hope to be more productive in the next future, who knows...Apart from that, Lyon is still a very nice city to live, to eat, to ski, to swim, to go out, and...to work sometimes.

Chris Sheldon writes: I started as a senior research scientist at AstraZeneca at Alderley Park in January 2004 and am just in the process of buying a house in Macclesfield. I will marry Ana in Madrid in April/May 2005 but the exact date is still to be arranged. I am frantically trying to learn some Spanish in my spare time so I can communicate with Ana's family!

Paul Bethel writes: I left my job at Millennium pharmaceuticals (Cambridge) in September 2003 due to site closure and moved to AstraZeneca near Macclesfield in November 2003 and met a few old Aggarwal Group members (**Susannah**, **Gair** and **Chris Sheldon**).

Beatrice Pelotier's Baby-Daughter, Marie,

writes: *I* was born on the 27th of September at 6.02 pm in Villeurbanne (near Lyon). *I* weight 3.6 kg and measure 50.5 cm. To the delight of my parents, *I* sleep very well at nights... therefore *I* make sure *I* keep them busy during the day!..

Here are a few pictures of my first days. Marie





Ingo Emme writes: I was so inspired by the news of engagements and weddings in the last newsletter that I popped the question myself. Ina Papastavrou and I were married in October 2003.

Imhyuck Bae wrote to let you know that he is currently doing a post doc with Prof. Sukbok Chang in KAIST, Korea.

Marco Ferrara wrote to say that he now works for Merck Research Laboratories and his girlfriend **Marina Porcelloni** works for Menarini Ricerche. They both live in Rome, Italy.

Kirstin Obierey, who works for Volkswagen, writes: It is little chemistry but a lot of work. We are trying to get the latest Bentley Continental GT out of the paint shop onto the roads. The chemistry I have to deal with are solvent borne and waterborne basecoats and different clear coats. It is very interesting, and due to my time in England I do work with Bentley in Crewe and Volkswagen South Africa as well. But I also have to admit that sometimes I do miss proper chemistry and the lab work. I just wanted to let you know that my tidings with Britain have become stronger again! During Ed Hutchinson's wedding in August 2000 (people from Sheffield certainly remember him) I met his brother-in-law Diarmid. Diarmid and I are now engaged and we do look for a possibility to live together in the near future. I will have to give up my job

here as he is having 2 very sweet kids aged 12 and 9. When we are together we are a very nice little family. But finding a job in Scotland is not that easy, so I have been looking for quite a while now. But I am sure that one day something will turn up. So that I will return to Britain just as I always wanted to! And as I am spending a lot of time in Edinburgh I do have the chance to meet up with Emma and Julia.

Alison Thompson writes: I am still in Halifax Nova Scotia working as a professor in the Department of Chemistry at Dalhousie University. It is very cold here at present (-23C as I write this). However, the sky is very blue, the sun is shining, and there is a sprinkling of fresh snow so it is very pretty and all very bearable, albeit dressed in full ski attire! David (Jakeman - professor in the College of Pharmacy at Dalhousie University) and I moved house at the end of 2002 - nice house, shame about the wallpaper - so that and work keep us busy most of the time, with crochet obviously filling the rest of the time. Still skiing as much as we can, although we did try our hand at surfing (not recommended must be nicer to try in Hawaii!) this year when Julia and Bruce Adam came to visit. PS It's nice and warm in the summer, honest! Best wishes to all. Alison

Emma Alonso is currently in Seville, Spain, with husband **Steve Roseblade** and daughter Nerea, who is now over 18 month-old (see picture below). She has recently started to work as a researcher for CSIC alongside her husband.



Varinder Aggarwal:

I was absolutely delighted to hear all the news from former groups members. It was such a joy and personal pleasure to hear about new partnerships (Kirstin – yours is particularly interesting, and Kevin – weren't you married already?), babies coming into the world (including Xmas arrivals – well done Sarah!) and your own personal successes in work. I congratulate you all.

Rachel has informed me that she will be on secondment from Syngenta to Goa, in India from February 2004. Goa as many of you will know was the hippy capital of the world, 40 years ago. So you are a tad late, Rachel, but I am sure you will be able to create the same atmosphere again! I am also rather jealous, as Goa boasts some of the best beeches in the world.

I hope that this newsletter will help the enlarged Aggarwal Family to keep in touch with each other and stay together.

I thought I would include some of our own news and attach a photo here of our two delightful boys. Lukha (5) started school in September and seems to be enjoying it but doesn't tell us very much about what he does there. He has said that he chases the girls at playtime with some of the other boys and his favourite activity is drawing animals. In fact he loves anything to do with animals except holding them! A whole new world of school dinner puddings has also opened up which he loves although he is not sure about the "flat/bouncy meat" or the "bullet peas". Romi (3) goes to pre-school every morning and loves it. When asked, he always tells us what he did there and who he played with. For example, the other day he said "Yesterday, when we were in Australia.....!!" He really is on another planet, or is he from another planet???



Well, that's all for 2003. If you enjoyed reading this and wish to share some of your events from 2004 or any previous years, please write in and I will include it in next year's newsletter. As you can see, photos add considerably to the pleasure and interest in the newsletter, so please include these where possible.

We have lost touch with some former members of the group and would be grateful if you could forward this newsletter on to them or pass on their email address to us.

Abraham Thomas Beverley Mattison Cristina Garcia Paredes Eddie Moya Hesham Abdel Rahman Laura Ceccherini Marilena Kalomiri Mark Lightowler Monica Catasus Rob White Stephan Schade

List of publications 2003

'Catalytic Asymmetric Sulfur Ylide Mediated Synthesis of epoxidation of Carbonyl Compounds: Scope, Selectivity and Applications in Synthesis' V. K. Aggarwal, C. L. Winn, *Acc. Chem. Res.*, **2004**, in press.

'Effect of Sulfide Structure on Enantioselectivity in Catalytic Symmetric Epoxidation of Aldehydes; Mechanistic Insights and Implications' V. K. Aggarwal, J. Charmant, L. Dudin, M. Porcelloni, J. Richardson, *Proc. Nat. Acad. Sciences*, **2004**, in press.

'Catalytic Asymmetric Nazarov Reactions Promoted by Chiral Lewis Acid Complexes' V. K. Aggarwal, A. J. Belfield, *Org. Lett.*, **2003**, *5*, 5075-5078.

'Highly Diastereoselective Simmons-Smith Cyclopropanation of Allylic Amines' V. K. Aggarwal, G.-Y. Fang, G. Meek, *Org. Lett.*, **2003**, *5*, 4417-4420.

'Synthesis of Either Diastereoisomer of Cyclopropane Amino Acids from Dehydroamino Acids and Diazo Compounds Generated In Situ.' L. A. Adams, V. K. Aggarwal, R. V. Bonnert, B. Bressel, R. J. Cox, J. Shepherd, J. de Vicente, M. Walter, W. Whittingham, *J. Org. Chem.*, **2003**, *68*, 9433-9440.

'The complexity of catalysis: Origins of enantio- and diastereocontrol in sulfur ylide mediated epoxidation reactions.' V. K. Aggarwal, , J. Richardson, *Chem. Commun.* **2003**, 2644-2651.

'Asymmetric sulfur ylide mediated aziridination: application in the synthesis of the side chain of taxol.' V. K. Aggarwal, J. L. Vasse, *Org. Lett.*, **2003**, 2644–2651.

'Tandem Formation and [2,3] Rearrangement of Methylene Ammonium Ylides Derived from Amines and the Simmons-Smith Reagent.' V. K. Aggarwal, G. Fang, G. Meek, J. P. H. Charmant, *Org. Lett.* **2003**, *5*, 1757-1760.

'Profile of V. K. Aggarwal', Org. Biomol. Chem., 2003, issue 4.

'Palladium catalysed cyclisation-carbonylation of enynes to give cyclic γ , δ -unsaturated acids.' V. K. Aggarwal, M. Butters, P.W. Davies, *Chem. Commun.* **2003**, 1046-1047.

'Sulfur Ylide Mediated Synthesis of Highly Functionalised and Trisubstituted Epoxides with High Enantioselectivity. Application to the Synthesis of CDP 840.' V. K. Aggarwal, I. Bae, H.-Y. Lee, D. T. Williams, *Angew. Chem. Int. Ed.*, **2003**, *42*, 3274-3278.

'A new protocol for the *in situ* generation of aromatic, heteroaromatic and unsaturated diazocompounds and its application in catalytic and asymmetric epoxidation of carbonyl compounds. Extensive studies to map out scope and limitations.' V. K. Aggarwal, E. Alonso, I. Bae, G. Hynd, K. M. Lydon, M. J. Palmer, M. Patel, M. Porcelloni, J. Richardson, R. Stenson, J. R. Studley, J.L. Vasse, C. L. Winn, *J. Am. Chem. Soc.*, **2003**, *125*, 10926-40.

'Highly Enantioselective Oxidations of Ketene Dithioacetals: Formation of *Trans* Bissulfoxides without Contamination from *Meso* Isomers.' V. K. Aggarwal, R. M. Steele, Ritmaleni, J. K. Barrell, I. Grayson, *J. Org. Chem.* **2003**, *68*, 4087-4090.

'A Novel One-pot Method for the Preparation of Pyrazoles by 1,3-Dipolar Cycloadditions of Diazo Compounds Generated *In Situ*' V. K. Aggarwal, J. de Vicente, *J. Org. Chem.* **2003**, *68*, 5381-5383.

'Generation of Phosphoranes Derived from Phosphites by Iron Porphyrin Mediated Carbene Transfer. A New Class of Phosphorus Ylides Leading to High *E* Selectivity with Semi-Stabilizing Groups in Wittig Olefinations' V. K. Aggarwal, J. R. Fulton, C. G. Sheldon, J. de Vicente, *J. Am. Chem. Soc.*, **2003**, *125*, 6034-6035.

'Transition Metal Reagents and Catalysts – Innovations in Organic Synthesis – Book Review' V. K. Aggarwal, *Org. Proc. Res & Development*, **2003**, *7*, 222-222.

'Highly diastereoselective 1,3-dipolar cycloaddition reactions of *trans*-2-methylene-1,3-dithiolane 1,3-dioxide with 3-oxidopyiridinium and 3-oxidopyrylium betaines: a route to the tropane skeleton.' V. K. Aggarwal, R. S. Grainger, G. K. Newton, P. L. Spargo, A. D. Hobson and H. Adams, *Org. Biomol. Chem.*, **2003**, 1, 1884-1893.

'New insights in the mechanism of amine catalysed epoxidation: dual role of protonated ammonium salts as both phase transfer catalysts and activators of Oxone[®] for alkene epoxidation', V. K. Aggarwal, C. Lopin, and F. Sandrinelli, *J. Am. Chem. Soc.*, **2003**, 7596-7601.

'The use of enantiomerically pure ketene dithioacetal bis-sulfoxides in highly diastereoselective intramolecular nitrone cycloadditions. Application in the total synthesis of α -amino acids, (-)-cispentacin and the first asymmetric synthesis of 4-amino-pyrrolidine-3-carboxylic acid.' V. K. Aggarwal, S. Roseblade, R. Alexander, *Org. Biomol. Chem.*, **2003**, 1, 684 – 691.

'Correlation between pK_a and Reactivity of Quinuclidine-based Catalysts in the Baylis-Hillman Reaction – Discovery of Quinuclidine as Optimum Catalyst Leading to Substantial Enhancement of Scope', V. K. Aggarwal, I. Emme, S. Y. Fulford, *J. Org. Chem.* **2003**, *68*, 692-700.

⁶Extension of Ring Closing Metathesis Methodology to the Synthesis of Carbocyclic Methyl and Silyl Enol Ethers². V. K. Aggarwal, A. M. Daly. *Chem. Commun.* **2002**, 2490-2491.