abdo COLLEGE

Re:View

Keeping excellence in your sights | May 2012 | Issue 10

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Swan song

Colin Lee reflects on his time as chairman of the ABDO College Board of Trustees

When I accepted the post of chairman for the ABDO College Board of Trustees I considered it to be a bit of a sinecure, a titular head of the guardian body of the College, but I couldn't have been more wrong! Since being appointed I have been involved in all aspects of the College, including financial management, academic content of courses, staff and their management and anything else I cared to poke my nose into! I have enjoyed every minute of it and I am sad that my tenure is now coming to an end.

It has been an eventful journey over the past four years. Probably the most significant milestone has been the introduction of the Foundation Degree/ BSc (Hons) course in ophthalmic dispensing; in fact the College, working with Canterbury Christ Church University, now runs two degree courses. In addition to the ophthalmic dispensing degree course, the College also offers the 'ODS' (Optical Dispensing Studies) course, aimed at existing ABDO fellows who want to supplement their FBDO qualification with a degree. Both of these courses have taken an enormous amount of work and are a great credit to Jo Underwood and her team.

I hope and believe the ABDO members and the Association will obtain great benefit from these additions to our academic portfolio. I am already hearing that employers are finding benefit in the degree fellows and their abilities to tackle management challenges.

Talking of the employers, another step forward during the last three years has been the introduction of the Employers' Liaison Group. We now regularly invite all employers along to the College for discussions about our plans and ambitions, but also, equally importantly, we ask them for their feedback on all aspects of our training and the benefits they consider may accrue from any changes. We appreciate we are in a competitive market and as we believe we are the 'gold standard' in ophthalmic dispensing training, we would like to ensure we continue to achieve that title by continually consulting with our customers.

Another significant first for the College was the introduction of a January student intake this year. We had previously been restricted from increasing our numbers by the GOC, so we applied to them last year for permission to increase our intake. This was granted giving us the opportunity to add a new stream of students starting in January, thereby giving employers more flexibility in their planning and recruitment. It is all credit to Michelle Derbyshire and her team that this intake was virtually full within weeks of the plans being finalised.

One of the long term criticisms of the College has been a lack of transparency regarding our activities and management. We have tried very hard to counter those critics by introducing the College newsletter, *Re:View*, which Michael Potter has been influential in producing. I hope and believe it has enabled ABDO members and future students to be provided with more of an insight into our College.

Finally, I would like to publicly thank general secretary, Tony Garrett and chief finance officer, T Pavanakumar for all their support and wish ABDO College continued success in the future.

Colin Lee FBDO, Chairman,
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I used to know everything about my job. Happily working in practice full-time, I could talk to patients about varifocal lens distortion and the benefits of high index lenses all day long – life as an optical assistant was good. A manager-pleasing dispense record eventually meant that two optometrist friends asked me to join them when they opened a new independent practice and I jumped at the chance; within the first few months of working as the only dispenser in a five-person practice, it became clear that (at first from a purely logistical point of view) it would be useful to have a dispensing optician in practice and that I was the prime candidate.

My impression of a DO's role, from my limited experience up to then, was at that point 'my job, but with lots of pointless anatomy thrown in', so I was fully ready for three years spent figuratively walking in the park through a bunch of weekly assignments and a few weeks away on block release. Now, it'd make a good story to say there was a clear turning point when I was set straight about the gulf between job descriptions, but it's truer to say that following a very steep learning curve within the first few months, I'm still (as I write this, in the final stretch of the ABDO College/CCCU ophthalmic dispensing degree course) constantly finding new ways that I can use the skills and knowledge of even a fledgling DO to solve problems in practice that I could never have even understood previously.

The first few weeks of the course were tough. Not necessarily in terms of course content (unless you count the gritted teeth through which I had to buy my brother a beer in exchange for measuring his field of view), but in terms of feeling uncertain about what I was doing. I wasn't sure I understood every topic as well as I should, I didn't know whether my assignment marks were what was expected of me, how they compared to other students', whether there were any other students out there except for me! Then, my first block release session at ABDO College changed all of that.

I've only studied ophthalmic dispensing in one place and it'd be pretty arrogant to be too hyperbolic about my experience of ABDO College, but I can at least say I can't think of anything I'd change about my time studying there. If someone needs to learn about near vision effectivity error, I'm fairly sure there are worse ways to do it than in well-equipped facilities, surrounded by lecturers who manage to balance knowing exactly what they're talking about with being able to communicate like real people and show genuine interest in students – after the first block, everyone had learned my name. Even when lecturers were mercilessly breaking down the worst of my dispensing habits, it was a positive experience. Every time I was being shown an OA's rule of thumb that could go out the window, I started wanting to find another bad practice to go with it. In what is an extensive sphere of knowledge, I was shown the difference between when I needed to know five decimal places and when I could focus on applying that knowledge more practically. Going on block to be personally taught at ABDO College was the catalyst that gave the weekly assignments structure and turned them from a lonely, unsure place to be into a thirst to find out what else this dispensing malarkey involved.

Returning home to plough through more reading on aspherical surfaces was made more worthwhile for having actually met the people that were going through it with me. Recently, I was talking with a couple of friends about what we remembered of our preconceptions before we went to college; we all admitted to having worried that there wouldn't be anybody else like us on block – whether that individually meant 'young', 'outgoing' or just 'nice'. The students in my year at college probably couldn't be more diverse, but even amongst the people that would have had the least in common in the real world, we had the course in common. Whether for different people that became the common goal, the common interest, the common enemy to eventually be conquered together, or simply the common knowledge needed to make the worst optical jokes over lunch.

Over the last three years, I've learned a lot. ABDO College has put me in the environment, and snuck into me the attitude, to constantly find out more that I'm capable of; perhaps more importantly, it's given me the chance to make some of my best friends through optics. As a friend of mine predicted over a beer one night on our first block, these people aren't just learning at the same time as us, they're going to be our professional peers – these friendships will evolve into being our own network of technical gurus, frame-locators and problem-solvers. Looking back on a syllabus that has gradually revealed itself to be further than I could have imagined from 'my job, but with lots of pointless anatomy thrown in', it's difficult to imagine having gotten through it (and actually feeling kind of prepared to do it for a career) without such a positive start.

Now, I know I mean surface astigmatism in progressive lenses. I know that the increased thickness of CR39 might just give a patient the reading magnification they need, rather than the lighter spectacles and wallet afforded by 1.74. I like to think that manager-pleasing is now built on the more stable foundation of patient-pleasing. Sure, studying for the FBDO qualification with ABDO College means I now have to start thinking up a lifetime of new answers to 'so do you test eyes?', but at least I found out that the reason I knew everything about my job as an OA was that I was in the wrong job.

Ben Brewer wins 2010/11 2nd year FD student prize

Ben Brewer has been awarded with the 2010/11 prize for Best 2nd year student on the Foundation Degree in Ophthalmic Dispensing course. Ben started working as an optical assistant for a multiple during his gap year prior to commencing on a law degree course; however he then did a U-turn, as something about optics really clicked with him, he decided to embark on a career in optics instead.

Four years ago, when two of his optometrist friends opened a new independent practice (Shore Sight Opticians in Braunton, Devon) they asked him to come and dispense, and then they all figured it would be a good idea if he could turn dispensing by 'rule of thumb' into better dispensing based on structured and formal learning. Since then Ben has never looked back (as you can see from his feature article above!).

Left to right: Vinni Virdee, Ben Brewer and Jo Underwood

The Foundation Degree prize is generously sponsored by Transitions Optical and Ben received a cheque for £500 from their product consultant Vinni Virdee FBDO, as well as a commemorative certificate from ABDO College Principal Jo Underwood.

On receiving the prize Ben said "I'm proud and flattered to have received the award, it's a nice feeling to be part of what is a hard-working and talented year of student DOs."

Anisometropia

by Sally Bates BSc (Hons) FBDO Cert Ed, ABDO College Lecturer

In practice we are sometimes faced with a non-tolerance dispensing. Often the reasons and solutions are obvious, such as a change in progressive lens design or lens material, wrap style lenses or incorrect centration. However, anisometropia may not have been detected when assessing a prescription; or the patient had not previously suffered any problems associated with anisometropia – for example, in the case of contact lens wearers, monocular pseudophakic patients, or those individuals who have undergone a procedure for monocular refractive surgery.

This article aims to help the reader identify and understand the optical problems associated with anisometropia, and provide a selection of solutions that can be used in practice. This topic forms part of the ABDO FQE (Final Qualification Examination) Section C syllabus and is a requirement to be included in the student's dispensing portfolio.

Anisometropia is the condition when the eyes have different refractive powers; it is considered to be problematic when the difference is 2.00D or more. If the patient's visual acuity is recorded, it is possible to determine whether the uncorrected anisometropia will lead to visual problems related to wearing spectacles. This includes blurred vision and diplopia when looking away from the optical centres of the lens, eg when looking down to read.

For example, if the prescription is 2.00D difference and the VAs are 6/6 Right and Left, then anisometropia and aniseikonia will be a problem. If the VA's are 6/60 Right and 6/6 Left, there is unlikely to be a problem due to the reduced visual acuity in the right eye.

Always remember for each dioptre difference in power between the lenses, there will be 1 dioptre of vertical differential prismatic effect induced at the near visual point (NVP) if it is taken as 10mm below the distance optical centre.

According to British Standards, patients can tolerate 1Δ vertical differential prismatic effect binocularly; although some patients can adapt to as much as 3Δ of vertical anisometropia, whereas others can only tolerate 0.25Δ. Tolerance is much greater horizontally; up to 10Δ base out and 4Δ base in for distance vision, and up to 7Δ base out and 7Δ base in for near vision. (Reference: *Elmsley*).

Anisometropia is considered to be a serious complaint in newborn babies as it leads to amblyopia which can adversely affect the development of binocular vision in infants and children. The brain will often suppress the image of the weaker eye, leading to amblyopia.

Aniseikonia

RIGHT			
Sph	Cyl	Axis	VA
+4.00	+0.50	90	6/6

LEFT			
Sph	Cyl	Axis	VA
+1.00	+0.25	90	6/5

Figure 1

Those spectacle wearers with a large degree of anisometropia and good VAs may experience a difference in size and/or shape of the visual images and magnification; this is termed to be aniseikonia. The symptoms include visual discomfort, visual distortion of space and sometimes difficulty in achieving good binocular vision. The solution is to dispense lenses which alter spectacle magnification by changing the base curve and the lens thickness.

Generally, an aspheric lens is dispensed to the most positive powered eye in order to reduce spectacle magnification. The retinal image size is reduced due to the aspheric surface and base curve which is approximately 2.00D flatter in curvature.

Alternatively an iseikonic lens may be dispensed in order to increase the retinal image size of the least positive eye. By increasing the base curve to approximately 8.00D the thickness is increased by changing the lens shape, which in turn increases spectacle magnification.

The iseikonic lens (or 'sized' lens) is dispensed to the least positive powered eye.

An economical solution would be to order a larger uncut lens for the least positive eye in order to increase thickness and spectacle magnification.

Spectacle Magnification = Shape Factor x Power Factor

Single vision differential prismatic effect

Single vision differential prismatic effect occurs when the patient looks down through the lens to read. Vertical diplopia maybe induced when looking away from the optical centres of the lenses due to the different amounts of vertical prism, which is caused by the anisometropia. The patient will complain of seeing two images, one on top of the other. The above prescription induces δ = 3Δ Base Up in the left eye.

Solutions:

1. Two pairs of spectacles

Both pairs made to the same prescription, with the optical centres set lower for near vision. The distance pair should be glazed with the centres set for distance, and the near vision pair glazed to the **same** prescription with the near optical centres positioned approximately 8–10 mm lower. This compensates for the natural head tilt when looking down to read.

2. Slab-off

This is removal of base down prism from the most negative powered lens. The slab-off line should be positioned at the lower limbus. Base down prism is removed from the back surface, leaving a faint horizontal line across the lens.

3. Head position

Advise the patient to tilt their head slightly down for near vision, therefore they will view the reading material through the distance optical centres. This eliminates or reduces any unwanted vertical differential prism. However, it is only successful when the patient is **not** reading for long periods of time due to inducing neck problems caused by an uncomfortable head position.

Differential prismatic effect with bifocals

It is important to assess the differential prismatic effects at the NVP, which is assumed to be positioned at 10mm below and 2mm in from the distance optical centre. The spectacle wearer achieves the maximum amount of near vision at this point. If there is more than 1 dioptre of vertical differential prism, the patient may experience visual problems such as diplopia at near and be unable to tolerate reading for long periods of time.

Use Prentices rule, $P = cF$, to calculate the vertical $\delta\Delta$ at the NVP.

Where c is 10mm as the patient looks 10mm down the lens and F is the power along the vertical meridian.

Solutions:

Slab-off (Bi-prism or Bicentric)

D segments, E-line bifocals, trifocals and a limited selection of progressives may be slabbed-off. Slab-off the most negative eye as it induces the most base down prism. The minimum slab off available 2Δ base down; the base down prism is removed from the back surface of the lens.

Optically ideal for negative prescriptions; base up prism is induced by the segment which neutralises the base down prism of the main lens.

Alternatively a slab-on lens may be dispensed to the least positive eye. Again, flat top bifocals are used; however they are optically not ideal for positive prescriptions due to the base up prism that is induced by the segment.

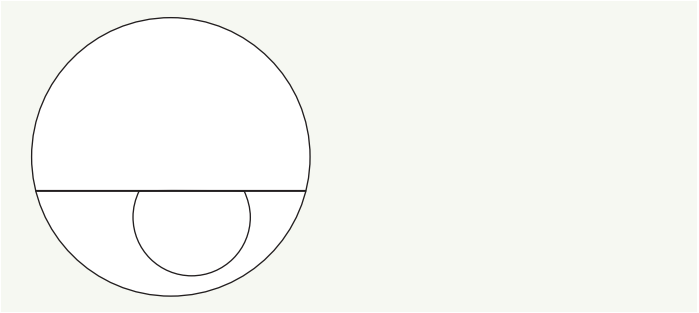

Figure 2: Slab-off D28 segment

Unequal round segs

Some patients do not like the cosmetic appearance of different size segs; however, this is obviously the most economical method of eliminating vertical differential prism. The largest segment is dispensed to the most positive eye, as it induces the most base down prism. The base down prism induced in the segment eliminates the base up of the distance power in the main lens. This method is only successful with round segments; they are available in the following diameters: 22mm, 30mm, 38mm, 45mm in glass and 24mm, 25mm, 28mm, 30mm, 38mm and 45mm in CR39 (note hi-index round segs are not available).

$$\text{Difference in seg diameters (mm)} = \frac{20 \times \text{differential prism}}{\text{Add}}$$

Franklin split bifocals

The distance and near portions are made from completely separate lenses, therefore the optical centres may be placed wherever required, or prism may be worked in one portion of the lens to correct unwanted differential prism.

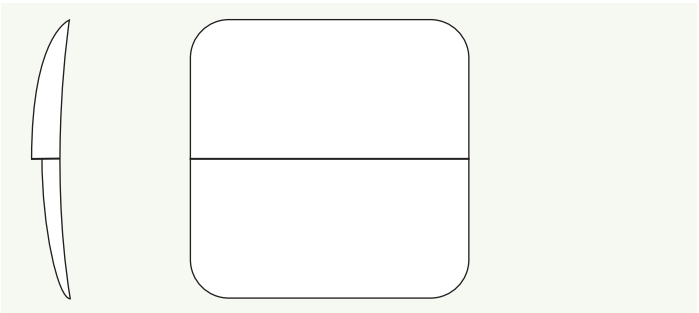

Figure 3: Franklin split bifocal

Sally Bates **BSc (Hons) FBDO Cert Ed**

Sally Bates is the proprietor of Identity Optical Training, specialising in training courses for practical examination revision and optical assistants Level 2 and 3 training. She is also an ABDO examiner and part-time lecturer at ABDO College, where she is responsible for teaching all aspects of practical ophthalmic dispensing.

Solid Prism Segment

Available from Norville Optical, this is a solid visible round 30mm segment glass bifocal. Up to 6Δ can be worked in any direction into the **segment only**. In general, it is cosmetically better to dispense base up prisms worked into the segment as the minimum thickness 'dip' lies at the dividing line and is hidden by the thickness at the prism base.

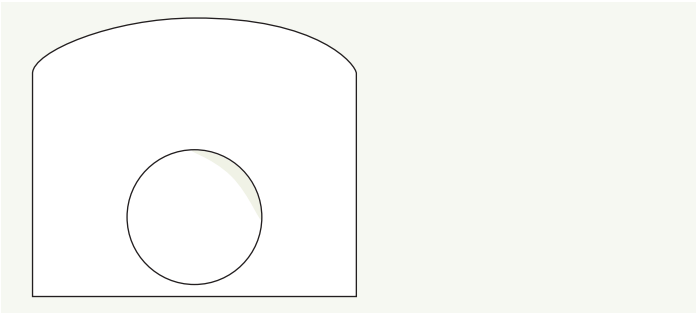

Figure 4: Solid prism segment with base down prism worked into the segment only

Bonded Prism Segment

Extra prism is incorporated into one segment and bonded onto a single vision main lens. Standard plastics lenses are used.

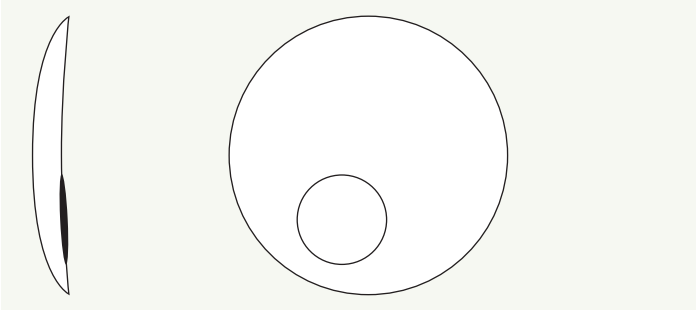

Figure 5: Bonded prism segment

Fresnel press-on prisms

Fresnel prisms are generally used as a temporary measure as they are cut to shape and stuck onto the front surface of the segment. This is not an ideal solution as the Fresnel may reduce the patient's visual acuity by approximately two lines. Fresnel prisms may be used for prism in any direction and are available from 1Δ to 30Δ; the maximum thickness is 1mm.

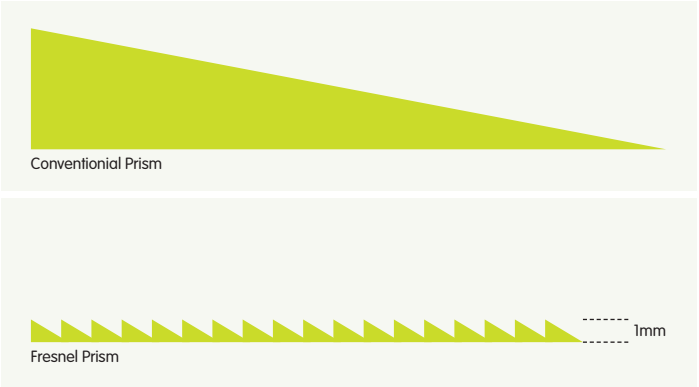

Figure 6: Fresnel press-on temporary prism

Differential prismatic effect with progressive power lenses

Selected lens companies, including Norville Optical and Essilor, are able to manufacture slab-off progressive lenses. Although slabbing-off negative lenses is an ideal solution, the line defeats the object of the cosmetic appearance of progressives, as it is visibly noticeable across one lens.

Slab-off (Bi-prism or Bicentric lenses)

The most negative eye induces the largest amount of base down prism which can be removed by slabbing-off. The slab-off line should be set at the lower limbus.

References

The Norville Prescription Companion
Practical Dispensing by Anthony I Griffiths
Practical Optical Dispensing by David Wilson

Prescription problems

Problem 1

RIGHT			
Sph	Cyl	Axis	VA
-2.00	-0.50	180	6/6
ADD +2.50			

LEFT			
Sph	Cyl	Axis	VA
-2.50	-2.50	175	6/6
ADD +2.50			

Vertex Distance 12mm

Figure 7: Vertical δ = 2.5Δ Base Down Left eye

Dispensing solutions:

1. Slab-off 2.5Δ base down D28 bifocal to the Left eye, standard D28 bifocal to the Right eye
2. Franklin split bifocal to the Right eye with 2.5Δ base down worked only into the lower portion of the lens, standard E-line bifocal to the Left eye
3. Odd size round segs

$$\frac{20 \times \text{differential prism}}{\text{Add}} = \frac{20 \times 2.5\Delta}{+2.50} = 20\text{mm difference in seg sizes}$$

   Dispense Round 45mm segment to the Right eye and 25mm segment to the Left eye
4. Solid prism segment to the Right eye with 2.5Δ base down worked only into the segment, glass Round 30mm segment to the Left eye

When dealing with myopic anisometropic prescriptions the ideal solution is to dispense a slab-off bifocal to the most negative eye as it is optically better for the wearer

Problem 2

RIGHT			
Sph	Cyl	Axis	VA
+1.50	-1.50	5	6/5
ADD +1.75			

LEFT			
Sph	Cyl	Axis	VA
+2.25	-0.25	177	6/5
ADD +1.75			

Figure 8: Vertical δ = 2Δ Base Up Left eye

Dispensing solutions:

1. Slab-on 2Δ base up D28 bifocal to the Right eye, standard D28 bifocal to the Left eye
2. Franklin split bifocal to the Right eye with 2Δ base up worked only into the lower portion of the lens, standard E-line bifocal to the Left eye
3. Odd size round segs

$$\frac{20 \times \text{differential prism}}{\text{Add}} = \frac{20 \times 2\Delta}{+1.75} = 22.87\text{mm difference in seg sizes}$$

   Dispense Round 22mm segment to the Right eye and Round 45mm segment to the Left eye
4. Solid prism segment to the Left eye with 2Δ Down worked only into the segment, glass Round 30mm segment to the Right eye

When dispensing positive anisometropic prescriptions the ideal solution is odd size round segs as they are optically better for the wearer than flat top bifocals

Problem 3

RIGHT			
Sph	Cyl	Axis	VA
-4.00	-2.75	110	6/60
ADD +2.00			

LEFT			
Sph	Cyl	Axis	VA
-1.25	-0.50	12.5	6/6
ADD +2.00			

Vertex Distance 11mm

Figure 9: Vertical δ = 5Δ Base Down Right eye

Dispensing solutions:

The Right eye is amblyopic; anisometropia is unlikely to be problematic due to the poor VA in the right eye. Check if the previous pair was dispensed with a 'balance' lens in the right eye, if so repeat again.

Problems may arise when the patient is used to wearing the full prescription and a balance lens is dispensed. The wearer can be accustomed to different retinal image sizes and may not tolerate equal image sizes. Balance lens: -1.50DS Right eye.

Student prize winner
Gareth Deen awarded Access prize

Left to right: Michelle Derbyshire, Gareth Deen and Barry Dibble

Gareth Deen is the first ever winner of ABDO College's newly introduced 'Best continuing Access student prize'. Gareth, who works at the Specsavers Opticians practice in Bridgend, was awarded the prize for the highest attained pass mark in any of the five Access courses run by the College in 2011. Successful in the two courses he personally undertook, English and Mathematics, it was his highest student pass mark in English that won him the award.

Gareth started his career in optics in prescription laboratories; after spells at Cardiff Optical and Lenstec he subsequently left the profession for a while to run a pub. Attracted back into optics he decided that he wished to acquire a formal optical education and is now in the first year of ophthalmic dispensing studies with an aim to becoming a qualified DO.

Introducing the prize at a ceremony held in Godmersham, Michelle Derbyshire, ABDO College's head of DLI (Distance Learning Institute), explained that the Access courses are designed to help prospective dispensing optician students meet the necessary entry requirements for the College's ophthalmic dispensing courses and that they are also a useful refresher for those who have been away from educational studies for a while. In addition to English and Mathematics, courses in General Science, Human Biology and Optics & Dispensing are also available.

The prize, consisting of a B&S (Breitfeld & Schliekert) optical toolkit, generously sponsored by Dibble Optical Supplies, was presented by company director Barry Dibble, who is also immediate past-chairman of the Federation of Manufacturing Opticians (FMO). Established three years ago, Kent based Dibble Optical Supplies specialise in the distribution of high quality ophthalmic consumables, accessories and small tooling.

Clearly highly delighted with his prize, which he described as 'brilliant', the toolkit will prove useful to Gareth in practice for many years to come.

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For further information on ABDO College sponsorship opportunities contact Michael R Potter FBDO on 01227 733 913 or email at mpotter@abdo.org.uk.

All smiles at foundation degree presentation evenings

Earlier in the year ABDO College held two foundation degree presentation evenings for students who were at Godmersham on their final 3rd year block release sessions. Hosted by College principal Jo Underwood, the sucessful students were awarded their Canterbury Christ Church University (CCCU) foundation degree certificates by CCCU's Professor Kate Springett during the first of the two events and by Jan Jensen during the second.

ABDO President, Jennifer Brower, also attended the first event to personally extend her congratulations.

Both evenings commenced with a technical lecture on the Trivex lens material from Dora Plisic of PPG Industries (pictured immediately above) and following the certificate presentations students celebrated their success with staff from ABDO College and CCCU. As you can see from the pictures it was smiles all round!

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