abdo COLLEGE

Re:View

Keeping excellence in your sights | June 2022 | Issue 42

Graduation celebrations

Changes to the contact lens programme

Acanthamoeba and soft lens materials

We are always developing even better options for advancement

Welcome to the summer edition of *Re:View* and a very warm welcome to Pauline Bradford, our new academic link tutor with Canterbury Christ Church University. Inside you can read more about what her role entails.

ABDO College is forever thankful to all our sponsors and welcomes new support from Indizen Optical Technologies (IOT) and Hoya. Find out more in News.

The cornerstone of ABDO College has been education and training to help students obtain the renowned FBDO qualification. Our optical assistant courses are an alternative and more relevant route to embarking on the FBDO programme of learning than many mainstream education qualifications.

Our courses are designed to develop registrants and the practice team to better support the patient and the business.

We consider our FBDO qualification as the gold standard and foundation of the dispensing profession. However, to enable the profession to progress and flourish, we need to ensure that we continue to develop our knowledge, skills and behaviour beyond registration to meet the changing needs of our patients. With that in mind, there will be a suite of smaller building blocks of education on offer in the near future.

As we embrace the learning outcomes within the new syllabus, set to launch next year, researching skills are a welcome addition which builds acclaim for the individual and our profession, enabling the welcome development of a research profile and evidence-based practice.

This autumn we will also see the launch of a revised and updated contact lens and low vision programme, ensuring that both remain relevant and fit for the future. I leave you with the question to ask yourself: what will be the next step I take in developing my career towards FBDO and beyond?

Clive Marchant FBDO
Chair, ABDO College Board of Trustees

ABDO College
Godmersham Park, Godmersham, Canterbury, Kent CT4 7DT
tel: 01227 738 829 option 1 | fax: 01227 733 900 | info@abdocollege.org.uk
www.abdocollege.org.uk
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Be inspired in your career choice

News

A stylish way to keep extra warm

Having listened to feedback, the College now offers all students the chance to buy an ABDO College hoodie. The hoodies are ideal to layer up as a winter warmer or to wear on their own on cooler summer days.

In line with the College's sustainability approach, all the hoodies are made using 100 per cent sustainable materials, that is 70 per cent regenerated cotton and 30 per cent recycled polyester.

The hoodies are offered in mottled grey or mottled navy and are available from the ABDO College Bookshop at **www.abdocollege.org.uk/bookshop**

Lecturers Haydn Dobby and Jasmin Glossop in the College hoodie

Be inspired

College lecturers have a profound and lasting impact on their students' lives, but have you ever wondered what it takes to become a lecturer at Godmersham? We've profiled three of our lecturers to inspire you to maybe consider such a prestigious role in the future. To find out more visit **www.abdocollege.org.uk/news**

CLO students set to benefit from more tailored support

The College has changed the contact lens optician (CLO) programme, with the improvements taking place from the September intake onwards. Residential block support will increase from two weeks to four weeks. Block one will be two weeks long, with block two and three one week long.

Explaining the background to the improvements, Steve added: "Previous feedback from employers and students highlighted the open-ended nature of the traditional structure. By introducing a third block in between theory and practical exams, we will provide tailored support to all students at each step of the journey, making it simpler to set clear objectives and timelines."

> 'With the array of enhanced services now beginning to be offered at practice level, clinically qualified staff are crucial to the long-term success of the sector.'

The third block will be scheduled after the theoretical examinations and will focus on preparing students for their practical examinations. Multimedia resources are also being introduced into the coursework elements to improve students' development in those areas.

Head of operational services, Steve Hertz, explained that the changes were necessary as the College aimed to support the profession's increasing demand for CLOs. "With the array of enhanced services now beginning to be offered at practice level, clinically qualified staff are crucial to the long-term success of the sector," he emphasised.

"CLOs not only provide a huge commercial benefit to practices but can also make a large contribution to a positive patient experience as part of a multi-disciplinary clinical team."

Steve emphasised that, by doubling the block support, the College could provide more teaching in person than in previous years. "This will be particularly crucial in learning the practical skills required for the CLO role at an earlier stage during block one, meaning students can take on greater contact lens involvement under supervision in practice almost straight away," he said.

"Blocks two and three will be focused on preparing students for their theory and practical exams respectively, giving a clear focus to studies at key points in the programme journey. Further multimedia content will enable students to learn in different ways and give an alternative perspective from paper-based learning," he concluded.

The CLO programme is designed for FBDO-qualified dispensing opticians and takes a minimum of one year to complete. Students must be working in practice at least one day per week with a GOC-registered supervisor, an optometrist or a CLO. For more details, visit **www.abdocollege.org.uk/courses**

Blossoming into their careers from a spring celebration

ABDO celebrated the graduation of dispensing opticians and contact lens opticians at Canterbury Cathedral on 4 April, with over 100 graduands from November 2020 to October 2021 attending.

The ceremony is a time-honoured tradition where graduands approach the dais one by one to be congratulated by the ABDO president. The ceremonial handshake indicates the moment when graduands become graduates and become a full part of the profession of dispensing optics.

The then ABDO president Jo Holmes, and Ian Davies, master of the Worshipful Company of Spectacle Makers, both addressed the graduands and their guests. "A spring graduation is unusual for ABDO, which made it extra special at Canterbury Cathedral this year," said Jo. "The new beginning of the season mirrors the new beginnings of our graduands' careers.

"This cohort has shown how committed they are studying through a pandemic,

with all the extra pressures of this too within their workplace environments," she emphasised.

"Every single person who graduated was enthusiastic and ready to take their FBDO qualification to the next level, be it training for contact lenses for enhanced services within their practices, becoming practice managers, and being the best DO they can in practice," she concluded.

Many of the prizewinners were from the College. In the contact lens awards, Christopher Simmons achieved three accolades, the Bailey Prize, the Alcon Prize for Excellence and the Association of Contact Lens Manufacturers' Prize. Daniel Palfrey received the British Contact Lens Association Prize and Justine Hawkes was presented with the Contamac Prize.

Shivani Pitts and Mia Bond were awarded the Essilor Prize. Abigail Bromley received the Stepper Prize and Joseph Townsend was awarded the James Conway Prize. Eloise Smith received the Association of Optometrists' Prize and Thomas Mannering was awarded the Worshipful Company of Spectacle Makers' Prize.

An earlier ceremony was held last year on 24 November for students who qualified between November 2019 and October 2020.

The next graduation ceremony will take place on Wednesday 23 November.

Sponsorship boost means the latest lens equipment

College students are learning all about lenses in the Hoya Ophthalmic Lenses Practical Laboratory, thanks to sponsorship from Hoya. The room has been refreshed with new informative posters funded by the company.

Students also have supporting materials from Hoya including a Sensity 2 Lens display, a Myself demo display, a Progressive portfolio display, a mirror and polarised display and a thickness display.

College principal, Dr Robert Cubbidge, said: "It is with great pleasure that I thank Hoya UK for their generosity on behalf of the students and staff. Links with industry help our students to gain a wide product knowledge which now includes the innovative product portfolio from Hoya."

Hoya's professional services director, Andy Sanders, said: "With innovative optical lens solutions, we believe that eyecare providers' education is key for patient care and Hoya is committed to training, education and upskilling.

"Valuing education so highly, Hoya is proud to support ABDO College and the education of students to ultimately support the profession and maintain high professional standards," he concluded.

Hoya was established in 1941 and has supported practitioners in the UK and Ireland since 1980 via its state-of-the-art Wrexham production laboratory. Worldwide, Hoya has over 150 facilities and 37,000 employees.

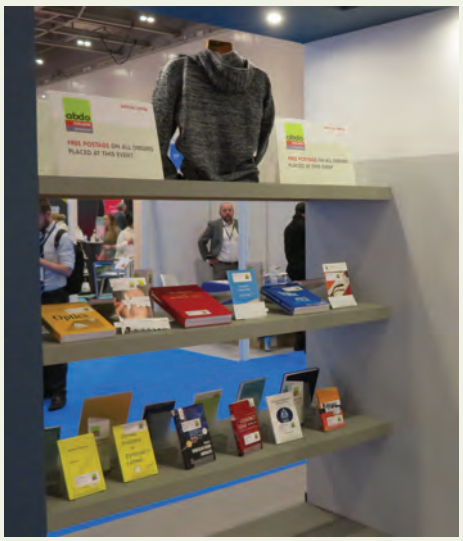
Putting on a show and tell at 100% Optical

ABDO College staff were out in force at 100% Optical in April, offering show visitors the opportunity to learn more about College courses, from the popular optical assistant course through to ophthalmic dispensing and contact lenses optician qualifications.

Head of operational services, Steve Hertz, said: "It was great to meet prospective, current and former students who took the chance to pop along for a catch up on all things Godmersham."

ABDO College bookshop also made a welcome return to the London show. There was a full range of optical titles covering dispensing, anatomy, contact lenses and low vision and various rules and gauges essential for study and practice. The College ran an event discount of free postage on all orders so that customers did not have to carry their purchases around the show.

On top of the educational items, former and current students could purchase ABDO College hoodies, eco-friendly reusable cups and water bottles. All the items are available in the College bookshop at **www.abdocollege.org.uk/bookshop**



A love of biology and a family background in the NHS inspire a new life and a successful career in optics

In their final year, ABDO College degree students are all required to complete a dissertation which focuses on a research question of their choice. In this feature you can read about Frances Stoker and her research paper, *'Do soft lens materials present a higher risk of acanthamoeba infection to contact lens wearers compared to rigid lens materials?'*

An interest in biology and a family background of working for the NHS led to a change of direction for Frances and paved the way for her successful career as a dispensing optician at Specsavers in Cirencester, Gloucestershire.

After completing a zoology degree, a lack of a placement as a trainee veterinary nurse and relocating led Frances to apply for optical assistant roles to take advantage of her three years of retail experience. She successfully applied for an optical assistant role at Specsavers in Cirencester, travelling from Cambridgeshire for the interview.

Frances enjoyed the role so much that five months after starting she enrolled onto the Specsavers course, Certificate 3. Five months later her store director gave her the opportunity to enrol onto the ABDO distance learning BSc (Hons) in Ophthalmic Dispensing degree course starting that September.

Her favourite modules were anatomy and abnormal ocular conditions. "Biology was always my favourite subject at school, so I found these modules particularly interesting," she said, adding: "Dispensing opticians have to refer patients presenting with any ocular issues so improving my knowledge in this area was important. I also really enjoyed the contact lens module."


Frances Stoker

Her least favourite part of the course was maths. "I found the start of the first year difficult as it was very maths heavy," she said. "However, attending block release helped massively as the lecturers were always on hand to help and were excellent at explaining everything."

Time management was also a struggle. "It is a very full-on course, especially with the degree assignments which need to be done alongside the weekly assignments and additional revision around exam time on top of working full time."

Frances overcame the difficulties by creating weekly timetables. "This helped to prevent me from getting too overwhelmed and ensured I was allocating enough time to each task," she said.

Her research was inspired by her favourite modules and a particular fascination for acanthamoeba and the way it causes infection and resists treatment, "making it an amazing, but gruesome organism".

Frances is still working at Specsavers in Cirencester, taking some time to focus on her role as a dispensing optician, as well as enjoying more free time. "I love interacting with the patients and I get real satisfaction from helping them find spectacles they really love or solving a challenging problem," she explained. However, due to her interests, she would like to take on a more clinical role in practice by completing the College's Contact Lens Certificate in the future.

Her advice to other students is to not leave assignments to the last minute as this causes unnecessary stress. "The same goes for the case records, try to write them up as you collect them," Frances advised. "It is also so important to make time to relax to enable you to be productive when you are studying."

Frances also recommends doing the degree course for those wanting to further their career. "Although challenging, it is interesting, rewarding and will also open doors to a range of opportunities," she concluded.

Do soft lens materials present a higher risk of acanthamoeba infection to contact lens wearers com

By Frances Stoker BSc (Hons) Ophthalmic Dispensing

INTRODUCTION

Acanthamoeba keratitis (AK) is a rare infection of the cornea which can lead to significant vision loss and even blindness (Lorenzo-Morales *et al* 2013). The infection is caused by a unicellular protozoan, acanthamoeba, that can exist in two forms, mobile trophozoites which feed and reproduce, and a hardy, double-walled cyst, which forms when conditions become unfavorable for survival (Szentmary *et al* 2019). Acanthamoeba is commonly found in the environment (Gomes de Lacerda and Lira 2021) and has also been isolated from water sources, such as swimming pools and household sources (Siddiqui and Khan 2012).

The risk of AK is strongly associated with contact lens wear, with established risk factors including sleeping in lenses, exposure to water while wearing contact lenses, using tap water for cleaning, poor hand, lens and lens case hygiene and improper use, or failure of, contact lens cleaning solutions (Carnt *et al* 2018).

Contact lenses can aid transmission of acanthamoeba as it is able to adhere to a variety of different materials and is then transferred to the cornea (Gomes de Lacerda and Lira 2021). Contact lens wear can compromise the integrity of the corneal epithelium and increases the risk of infection by causing minor abrasions and by altering physiological and metabolic processes of the epithelial cells (Ibrahim *et al* 2009). When the corneal epithelium is damaged, acanthamoeba can more easily bind to the corneal surface (Lorenzo-Morales *et al* 2013) and this triggers the secretion of a variety of proteases which degrade and destroy corneal cells, allowing the acanthamoeba to penetrate deeper into the anterior eye (Siddiqui and Khan 2012).

Signs and symptoms of AK include blurred vision, pain, epithelial defects, ring infiltrate and anterior chamber inflammation (Chin *et al* 2015). Prognosis for this condition is often poor as a result of delayed diagnosis and treatment (Siddiqui and Khan 2012). For this reason, prevention is key, so contact lens patients must be properly educated on compliance with contact lens hygiene practices to minimise the risk of infection (Gomes de Lacerda and Lira 2021).

METHOD

A basic research question was formulated and a mind map was created of concepts and related topics surrounding the research question, allowing search terms to be identified. Search terms were entered into different search engines to locate relevant articles.

Broad search terms were initially used, and then became more specific with the use of Boolean operators and additional inclusion/exclusion criteria to narrow the search to find the final key articles to be analysed in depth (Yoshii *et al* 2009), (Smith *et al* 2011).

Quantitative in vitro studies investigating acanthamoeba adherence to different lens materials were the primary focus to answer the research question, so the effect of material on the action of acanthamoeba alone could be isolated (Bostrom and O'Keefe 2008). Three papers were chosen to be discussed and analysed.

FINDINGS

Kilvington and Larkin (1990) found, when comparing quantitative adherence of A. polyphaga trophozoites and cysts to soft lens materials and a rigid lens material, there was a significantly greater adherence to the lens material lidofilcon A, a high water content, non-ionic hydrogel, compared to polymacon, a low water content, non-ionic hydrogel (trophozoites – p= <0.001, cysts – p= 0.005). There was no significant difference in adherence of trophozoites in polymacon, compared with sulphylcon A, the rigid gas permeable material comprised of fluorosilicon-acrylate (p= 0.4) and no cysts remained adherent to it (Kilvington and Larkin 1990).

Seal *et al* (1995) conducted a similar quantitative study but with A. polyphaga and castellanii found that trophozoites adhered to all the hydrogel materials (p= 0.000). For rigid lens materials, they only examined A. castellanii adherence and found that neither trophozoites nor cysts adhered to them. Seal *et al* (1995) also found that trophozoites and cyst adherence was significantly greater for ionic lenses (p= 0.000) and for high water content lenses (p= 0.000), although no interaction was found between the two factors.

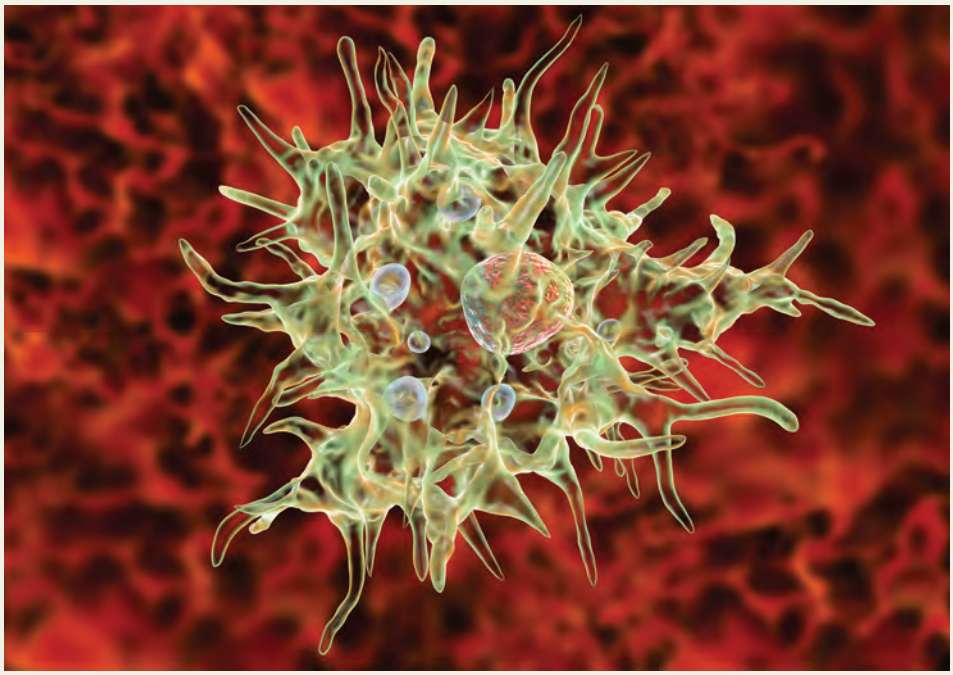
Reverey *et al* (2014) compared adherence of A. castellanii to three different hydrogel lenses and three different silicon hydrogel lenses. They found no significant difference in adhesion between them after 24 hours of exposure, but they did find that acanthamoeba adhered in significantly greater numbers to P[Alkyl-NVP-Copolymer] (hydrogel) and Aerofilcon A (silicon hydrogel) after one hour (at a significance level of 0.99 and 0.995 respectively). After 24 hours, both continued to show significantly higher adhesion at a significance level of 0.999. Both of these materials were high water content materials. No articles could be found that compared all three material types in the same study.

DISCUSSIONS

There are several limitations with these studies. The studies which investigated comparative adherence of acanthamoeba to soft lens materials versus rigid lens materials were both conducted in the 1990s and there have been no recent comparable studies. These results may not be applicable to current contact lens wear due to updates in technology and changes in contact lens prescribing trends (Efron *et al* 2015). This shows a need for new studies to be conducted, focusing on differences in adherence of acanthamoeba between a range of lens materials in current use.

The study design and methods varied across the three studies, making it more difficult to directly compare study results, suggesting that a standardised approach is required (Beattie *et al* 2003). These specific studies provide evidence that adherence is greater for soft lens materials compared to rigid lens materials and give indication of what material properties may be influencing adherence. However, other studies have found contrasting results. Kelly *et al* (1995) found, when comparing the quantitative adherence of A. castellanii trophozoites to rigid lens materials versus soft lens materials, that adherence was significantly higher to two rigid lens materials than the soft lens materials (p= <0.05). However, details of the statistical tests they performed to obtain

pared to rigid lens materials?



this data were not provided, reducing reliability (Watson 2015). Sharma *et al* (1995) supports this by also finding an increased adherence of acanthamoeba trophozoites to rigid gas permeable lenses. Due to this contrasting evidence, it is difficult to ascertain if differences in the contact lens material alone present a greater risk of infection for wearers of either lens type, thus making the evidence inconclusive.

In terms of material characteristics which could be influencing adherence, findings by Sharma *et al* (1995) do support the evidence for the effect of water content, finding greater adherence of acanthamoeba to the high water content soft lens materials. No suggestion of why this is could be found in the literature. Preston *et al* (2001) discuss how acanthamoeba attaches itself firmly to the surface of ponds for grazing via adhesion forces at the water-air interface. Perhaps acanthamoeba adheres to the surface of contact lenses in a similar fashion, with adhesion forces being stronger to high water content lens materials. Research would be required to provide evidence for this.

The increased affinity for ionic lens materials found by Seal *et al* (1995) is also supported by Simmons *et al* (1998), Lema *et al* (2001) and Hendiger *et al* (2020). These authors do not suggest a reason for this in vitro, but Preston and King (1984) found that acanthamoeba had better attachment to glass under ionic conditions, suggesting that the ionicity of lens materials may enable stronger adhesive forces between acanthamoeba and the contact lens. Ionic materials have a greater ability to attract proteins and other components from the tear film (Stephen *et al* 2019), causing an increase in adherence of micro-organisms (Dutta *et al* 2012). A biofilm can form and there is evidence suggesting presence of a biofilm may increase the adherence of acanthamoeba to the contact lens surface (Simmons *et al* 1998). This is likely due to it providing a food source for acanthamoeba (Gray *et al* 1995), (Huws *et al* 2005).

Contact lens wear can change the texture of the contact lens surface through abrasion and deposits from the tear film, creating a rough surface (Lira *et al* 2008). Various studies have shown that contact lens materials with a rougher surface had greater acanthamoeba adherence in both soft lens materials and rigid lens materials (Omaña-Molina *et al* 2014), (Lee *et al* 2016).

Lee *et al* (2018) conducted a study comparing adherence of acanthamoeba in cosmetic lenses to conventional lenses and found greater adherence to the cosmetic lenses. Furthermore, they found greater adherence to the coloured area of the cosmetic lenses, which was found to be rougher than the uncoloured part. The authors suggest that the rough areas provide an increased surface area, perhaps allowing a firmer attachment of the acanthamoeba (Lee *et al* 2018).

It is suggested that in vitro studies may underestimate results for acanthamoeba adherence (Kilvington and Larkin 1990) as in reality, lens wear introduces many other factors which can influence adherence, such as deposits from the tear film as previously discussed (Lira *et al* 2008). It is likely that the risk of acanthamoeba infection is attributed to a combination of several risk factors, including material characteristics (Carnt *et al* 2018).

CONCLUSION

Evidence for whether soft lens materials, or rigid lens materials, present a greater infection risk by acanthamoeba is inconsistent, and therefore inconclusive. Further research is required with standardised research methods comparing acanthamoeba adherence for lens materials in current use. Existing studies have consistently revealed three main factors which appear to influence acanthamoeba adherence: water content, ionicity and the surface texture of the contact lens. Lenses with a high water content, and/or are ionic, and/or have a rough surface, show increased adherence from acanthamoeba. No literature could be found that suggests, or has examined specifically, why this is, so further research is required to investigate this. In reality, it is likely to be a combination of risk factors that results in a clinical acanthamoeba infection.

For article references, visit
https://abdocollege.org.uk/references/

A change in role is now providing a valuable link between the College and CCCU

Dispensing optician and contact lens optician, Pauline Bradford, has become the new academic link tutor in ophthalmic dispensing for Canterbury Christ Church University (CCCU), providing the liaison between the university and ABDO College on the BSc (Hons) in Ophthalmic Dispensing programme.

"A key element of the role is quality assurance, providing an open line of communication between the two institutions and ensuring that the procedures at the College align with the expectations of the university," she explained to *Re:View*.

Pauline's background covers a range of experience both in practice ownership and in professional services. She has also recently completed her Higher Education Academy Fellowship, meaning that she is up-to-date with the latest


Pauline Bradford

thinking around learning theories and quality assurance standards.

"I currently divide my time between lecturing in optometry at the University of Plymouth and as the academic link tutor," she said. "I also take part in the contact lens practical exams for ABDO and carry out regular contact lens clinics."

Pauline's aim in her new role is to ensure that the success of the students on the ophthalmic dispensing programme is maximised. "Being organised is the key," she emphasised.

"Prepare for your teaching sessions and if there are any gaps in your understanding then ask questions and access any additional support as you go along. Don't let areas of concern stack up," she advised.

Pauline was attracted to her new role because of her experience as an ABDO member. "My background as a university lecturer seemed to be a good fit for this particular role as it encompasses both of these areas of interest," she said.

Her advice to any other dispensing optician or contact lens optician who might be interested in becoming a lecturer is: "Go for it. It adds a new dimension to your career and it's a great way to be part of the future of optics," she concluded.

If you have studied at Godmersham, home of ABDO College, have you found the beautiful house and grounds an inspiring place to work? If so, you are in excellent company. In the early 19th century, renowned author Jane Austen was a regular visitor to Godmersham, then home to her brother Edward and his family. Her novel *Mansfield Park* is even said to depict characters and scenes from the village.

Now novelist Gill Hornby has combined her love of Jane Austen's work with the beauty of the mansion and estate in a new novel entitled *Godmersham Park*. Anyone who has been to Godmersham will enjoy reading the book, not just for the story, but also for the descriptions of the house and estate when it was a family home.

In the book, set in 1804, Anne Sharpe, 31, arrives at Godmersham to take up the position of governess, despite no previous experience of either teaching or fine country houses. However, her mother has died, and she desperately needs an independent income.

Anne's awkward role means she must balance a position between the 'upstairs' and 'downstairs' which gives the reader the chance to imagine both the attic bedrooms and the gracious rooms downstairs as they would have been in the 1800s.

Godmersham Park will be released on 23 June and can be purchased at ABDO College reception. This summer Gill Hornby will be attending bookshop event signings and festivals across the UK.

Lens technology at the forefront and a refurbishment thanks to sponsorship

Students are discovering more about lens design at the College thanks to sponsorship from Indizen Optical Technologies (IOT), an independent company specialising in the development of lens technology which can be incorporated into own brand products.

IOT has refurbished the new IOT Dispensing Suite at Godmersham with educational posters and display materials. Students also have supporting materials from the company and the labs which work with it in the UK.

Explaining the background to the sponsorship, IOT general manager, Carolina Gago, said: "When I became an optometrist, I felt a strong need to continue learning. I decided to talk to one of my best optical professors at the university who had founded IOT.

"This experience made me value even more the importance of being well prepared and constantly linked to the university and training institutions.

I have no doubt that it will positively impact their future," Carolina concluded.

Due to research and development, IOT continues to push the boundaries of the geometrical limitations of lens designs with innovative technologies. Through partners, over 35 million lenses are produced annually, powered by IOT Intelligence.

College principal, Dr Robert Cubbidge, said: "On behalf of ABDO College, I would like to thank IOT for sponsoring the new IOT Dispensing Suite.

For that reason, I feel very proud to collaborate with ABDO College.

"My personal commitment to students is to provide them with high quality, honest and practical educational content.

"Its support will help to ensure that our students' knowledge of products remains at the forefront of the latest developments in lens design, enabling them to select the best solutions for their patients."

'My personal commitment to students is to provide them with high quality, honest and practical educational content.'

Your chance to get involved

Would you like to be included in a future edition of *Re:View*, maybe as a case study to encourage others or by offering your tips for success based upon your experiences? Do you have any ideas for possible news stories or articles? Is there some information you would find useful, or something you would like us to include? If so, we'd like to hear from you, so please email your ideas to **editor@abdocollege.org.uk**

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- Evidence of recent learning.
- You must be working in practice as a trainee dispensing optician for a minimum of 30 hours per week under a GOC-registered supervisor and have the support of your employer.

For more details and to apply:

visit **www.abdocollege.org.uk**

call **01227 738 829 (Option 1)**

or email **info@abdocollege.org.uk**

Applications close: 31 July 2022

KEEPING EXCELLENCE IN YOUR SIGHTS