

# ChromSoc

The Chromatographic Society - founded 1956

## 'Grass Roots 7' Educational Event

University of Cumbria, Ambleside, Cumbria

Friday 15<sup>th</sup>-Monday 18<sup>th</sup> August 2025



In October 2016, as part of the Society's Diamond anniversary celebrations, The Chromatographic Society held its first Grass Roots event in Grasmere in the Lake District. The course focussed on teaching the fundamentals of liquid chromatography to graduate students and novice chromatographers from industry. The event hosted over twenty attendees. The event was such a success that the Society repeated the course in Church Stretton in October 2017, with over twenty-five delegates from academia and industry attending.

Since then, five more Grass Roots courses have been held (Grass Roots 3; Small molecule method development, Grass Roots 4; Introduction to biopharmaceutical analysis, Grass Roots 5; Fundamentals of liquid chromatography and Grass Roots 6; Small molecule method development). For Grass Roots 7, we will be running an 'Introduction to oligonucleotide characterisation'.

This will be a four-day event (equivalent to three full days of activities over the weekend) relevant to post-graduate students (PhD and post-doctoral researchers who are or intend to work in the field) and industrial chromatographers new to the field. The course will focus on both smaller oligonucleotides (principally antisense, small interfering RNA and conjugated species) and larger oligonucleotides (messenger RNA – mRNA). We will start by discussing the terminology of oligonucleotides and the various modes of chromatography pertinent to characterise these molecules (and in the case of the smaller oligonucleotides, the phosphoroamidite building blocks). We will spend significant time on both generic and bespoke approaches to method development and the associated detection approaches (with mass spectrometry being a key detection approach). Additionally we will review the regulatory guidance pertinent to these molecules and other relevant testing approaches (e.g. electrophoretic modes and thermal melt). We will also have a select number of vendors who will share how their products are used in the characterisation of these oligonucleotides.

The event will be delivered by a number of chromatographers with extensive training and industrial experience (Dr Christina Vanhinsbergh (AstraZeneca), Tony Taylor (Element), Dr Ken Cook (Thermo Scientific) and Dr Paul Ferguson (AstraZeneca)). While the meeting will be primarily educational, there will also be extensive opportunities for networking and a social programme involving walking for those who wish to join us.

The event will be held in Ambleside at the University of Cumbria which is accessible by car, or by train to Windermere and a short bus or taxi journey from the train station. Direct trains (or one change at Oxenholme station) run from Manchester international airport to Windermere for overseas colleagues interested in attending the event.

We are delighted that we have vendor companies and learned bodies sponsoring the event by providing funding for a limited number of UK based post-graduate researchers (PhD/D.Phil) working, or intending to work, in the field to attend (value £500). Additionally, The Chromatographic Society will provide industrial bursaries for post-doctoral researchers, lecturers and chromatographers working in small and medium sized companies through our Ted Adlard industrial fund (£250).

Registration may be found at: [Registration Form - Registration](#). For sponsorship of this event and other queries, please contact us at [paul.ferguson@astrazeneca.com](mailto:paul.ferguson@astrazeneca.com).

## **Programme**

The lecture programme will include approximately 20 hours of lectures alongside a social walking programme and other events. The lecture programme will be 'fixed' content, but there is significant scope to include additional topics as requested by attendees and informal discussion during walks. We would also be happy to discuss any specific chromatographic queries or issues which you bring from your workplace. Attendees who wish to bring chromatography posters (or workplace challenges) to the event are welcome and these will be discussed at appropriate times linked to the programme.

Background to small and large oligonucleotide terminology, classes, manufacture, drug delivery
Fundamentals of biomolecule chromatography
Separation modes
Critical quality attributes, specifications and regulatory considerations
Platform approaches including sequencing
Characterisation of materials during manufacture
Bioanalysis of oligonucleotides
Method development approaches
Characterisation of formulations
Characterisation using other analytical techniques
Future modalities and challenges
Presentations from vendors

Course content and timings may be subject to slight change and will reflect latest developments in the science and regulations.

### Presenter biographies



Ken Cook started his working career as a lecturer in Biochemistry at the University of Newcastle upon Tyne before moving into industry.

His current job title is European team leader for the biopharma/pharma expert support group for Thermo Fisher Scientific. Ken has over 35 years' experience supporting and developing biopharmaceutical approaches to characterise protein and oligonucleotide based biotherapeutics.

His work includes strong collaborations with industrial and academic groups throughout Europe and the supervision of several PhD studentships. His publications are across a number of diverse fields including environmental, oil, food safety and adulteration, proteomics, protein chemistry, metabolomics, lipidomics and biopharma. His publications include the first paper on direct coupling of ion exchange into HRMS - the first method for direct mRNA sequencing by LC/HRMS.



Tony Taylor has been a practicing chromatographer for 37 years. He hopes to get it right soon!

He has used HPLC and LC-MS techniques in the pharmaceutical, industrial chemical and contract research industries, dealing with a wide variety matrices and analytical challenges.

He is currently the Chief Scientific Officer of Element Materials Technology Life Sciences, Europe, a global technologies and life sciences testing business. He has scientific responsibility for the Life Science and Environmental Testing business which includes over 20 testing locations and 560 colleagues – allowing him to explore a variety of challenges and develop new approaches for sample preparation, analytical methods and equipment.

He currently advises the business on HPLC(MS) and GC(MS) application development and problem solving. His current research interests include the classification of stationary phase selectivity, automated micro-extraction sample preparation techniques and advanced knowledge management

database development. He has been a trainer in analytical science for over 20 years and is proud to be the founder of CHROMacademy ([www.chromacademy.com](http://www.chromacademy.com)), the world's most popular online training and development platform for analytical chemists.

Tony has been involved with teaching on all of the previous Grass Roots events and was on the local organising committee for ISC2024 in Liverpool.



Christina Vanhinsbergh is a separations scientist with strong focus on biomolecules and biotherapeutics. Her academic research focused on single and multidimensional chromatographic method development for oligonucleotide therapeutics and alkylated oligonucleotides. Christina now works at AstraZeneca within the oligonucleotide platform of Pharmaceutical Technology and Development – New Modalities Parenteral Development. As a senior scientist, Christina develops analytical methods to support the CMC strategy for AstraZeneca oligonucleotide pipeline at late state clinical development of the drug product. She also supports industry-academic collaborations and research.

Outside of work, Christina is the Early Career Scientist Support Officer for the Chromatographic Society, UK. Within this position, Christina supports students and early career analysts to develop professionally. Christina has also recently been on the local organising committee for ISC2024, Liverpool.



Paul Ferguson is a separation science specialist at AstraZeneca and leads the separation science strategy for the Pharmaceutical Technology & Development division spanning both small and medium size (small peptides and oligonucleotides) novel therapies. He has worked in the pharmaceutical industry since 1999 (previously at Pfizer) following a post-doc at Imperial College London on capillary electrochromatography (CEC) with Dr Norman Smith. Paul has interests in UHPLC, SFC, CE, chiral separations, formulated drug sample preparation, green analytical chemistry and method development. He is a past winner of the Desty Memorial lecture prize (2002), a Fellow and Chartered Chemist in the RSC and lectured on the MSc Analytical Science for Industry course at Kings College London from 2009-2017, as well as other Universities. He is a visiting lecturer at the University of Amsterdam.

Paul has served as the Honorary Secretary of The Chromatographic Society (2017-2024), Vice-President (2009 to 2014) and President (2014 to 2017). He has also organised or co-organised several successful symposia for the Society since 2007 including the inaugural Grass Roots event held in 2016 in Grasmere. More recently, Paul served on the local organising committee for ISC2024, Liverpool.

### Registration fees (including VAT)

Attendee type	Cost
Industrial	£650
Industrial with Ted Adlard award bursary*	£400
Academic (including post-doctoral researchers and lecturers)	£500
Academic with ChromSoc bursary*	£250

*A limited number of full cost student sponsored bursaries are available. Once these are used, student bursaries (value £250) will be available (reducing cost to £250). Ted Adlard bursaries (value £250) are available for post-doctoral researchers, academic lecturers and industrial colleagues in SMEs (reducing cost to £450). \*A registration code for the discount on the registration website will be sent to applicants upon successful review of their application.*

#### Course fees include

- Practically focussed 3-day training course
- 3 night's accommodation (Friday, Saturday and Sunday evenings)
- All meals and course refreshments (breakfast, lunch and dinner – all dietary and faith considerations can be accommodated)
- Full set of course notes (electronic – sent in advance and on USB drive)
- Certificate of attendance
- ChromSoc membership until end 2025

The event will be capped at a maximum of 24 attendees so early registration is recommended.

#### Venue

We are delighted to be holding the event at the University of Cumbria in Ambleside. The university campus is ideally situated close to all amenities and night life in the village. We will be using the Heelis room in the Charlotte Mason building (building 4 on the map) for teaching. Both the campus and accommodation have Wi-Fi available. The university is obviously ideally equipped for teaching activities and is close to the starting points of the (optional) walks we will be undertaking on Saturday and Sunday. It is likely we will be using the IT suits for some of the teaching activities.

Another benefit of being at the university is the cost of hiring the facilities enables us to offer low registration fees for the event. The course fee includes all accommodation, meals, tea and coffee and course notes which we hope will encourage academic colleagues to attend.

We are also hoping that the weather in August will be kind – but we cannot guarantee this!



#### Travel to Ambleside

##### By car

The easiest way to reach Ambleside is to drive to the University, but parking can be limited on site. As the course is running at the end of term time we are *hoping* to obtain free on-site parking permits for all delegates (which we were able to for Grass Roots 6). If this is not possible, there is parking on the campus at the main entrance (see map below). The chargeable period on site is from 08.00 – 18.00 (10 Hours). Each day will cost £9.40. It is possible to pay with cash, debit/card or pay-by-phone.

There is also a large public car park opposite the main campus entrance on Rydal Road. It is possible to get a three day parking permit for the car park on £21.20. If a permit is bought on Friday at 3pm it will be valid until 3pm on Monday. See <https://www.westmorlandandfurness.gov.uk/parking-streets-and-transport/parking/parking-permits-day-passes-and-season-tickets/how-buy-3-or-7-day-parking-pass> for more details.

### **By air**

If travelling by air, the most convenient airport is Manchester airport. It is possible to take the train directly from the airport to Windermere train station. The journey time is approximately 2 hours and there are direct trains throughout the day (e.g. 11:28 train gets you into Windermere at 13.51 – check [Trainline.com](https://www.trainline.com)). Alternatively, it is possible to take other trains from the airport but you may have to change at Preston or Oxenholme (Lake District) and the journey time will be up to 2.5 hours. Train cost for a return ticket from the airport to Windermere is about £50. Some attendees in 2022 took taxis from Manchester airport to Ambleside, but this will obviously be very expensive (but possibly cheaper than a train if there are several colleagues from the same company).

### **By train**

If travelling by train from the north or south (or from airports other than Manchester), it is necessary to travel to Windermere by changing trains at Preston or Oxenholme (Lake District).

### **Local bus services**

For the approx. 6 mile journey from Windermere train station to the University in Ambleside, there are regular buses (e.g. 505, 555, 571 to Ambleside, Grasmere or Keswick – the bus stops outside the University opposite the Ambleside medical centre – see map) with a journey time of approx. 30 minutes. Alternatively, it is possible to travel by taxi although this will obviously be more expensive. The cost for the bus journey is £3.00 for a single ticket.

### **Accommodation**

The event will be held at the University of Cumbria which is on Rydal Road leading out Ambleside towards Grasmere. The university is ideally located to access village amenities (approx. 2 minutes walk to town centre) and the planned walks - while sufficiently far away from the bustle of the town centre.



Accommodation will be in the university's halls of residence which is over the road from the campus. The accommodation is a mixture of new and old buildings and there is parking space next to this. The halls are 3 minutes walk from the campus restaurant and classroom.

For those who do not wish to join us for the walks, there are numerous other activities which may be of interest instead including Lake Windermere boat cruises, shopping, cinemas, numerous coffee shops, crazy golf or taking a short bus journey to Grasmere where the famous poet William Wordsworth lived.

# Ambleside CAMPUS

**Address**  
University of Cumbria,  
Rydal Road, Ambleside,  
Cumbria LA22 9BB  
**Telephone**  
01539 430274

## University Buildings

	no.
The Barn	1
Beehive	2
Barrowdale	3
CMB Charlotte Mason Building	4
LD Landgale (Inc Percival Lecture Theatre)	5
Low Nook	6
Millet	7
Rigg Cottage	8
Scale How	9
Stockghyll Estates	10
	11

## Student Residences

no.	Student Residences	no.
A	Ashfield	A
B	Beechfield	B
C	Castle Crag*	C
D	Eagle Crag*	D
E	Fairfield	E
F	Fellbarrow*	F
G	Greenbank North	G
H	Greenbank South	H
I	Hazeldene	I
J	Heathfield	J
K	Helvellyn	K

## Student Residences

no.	Student Residences	no.
L	Rosthwaite	L
M	Seathwaite	M
N	Stybarrow	N
O	Wansfell	O
P	Yewbarrow	P



## Campus map key

- Main Reception To Building 1
- Building Access
- Accessible Entrance
- Staff And Student Permit Parking
- Designated Disabled Persons Parking Bay
- Pay-As-You-Drive Parking Bay
- Designated Car Share
- Bicycle Parking
- Vehicle And Pedestrian Access
- Pedestrian Access Only
- Showers
- Disabled Accessible Showers
- Café
- Pay And Display Parking (Open To The Public) Parking Bays

University of  
Cumbria

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