

OPTICA

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2024 Summary

Oxford Optica Student Chapter
OxOPS

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13.1.2025

2024 SUMMARY

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Introduction

The Oxford Optica Student Chapter was successfully revived in early 2023 after several years of inactivity. By the start of 2024, the chapter consisted of a small but enthusiastic group of members, all from the Department of Engineering Science. A key challenge during this period was to foster greater engagement within the optics and photonics community at the University of Oxford and to reintroduce the chapter to create a vibrant, interdisciplinary community.

To address this, our primary goal for 2024 was to establish a solid membership base spanning multiple departments and to consistently organise events with attendance ranging from 10 to 30 participants per event. We are proud to report that we not only achieved this goal but also expanded our reach to include members from the Departments of Materials, Chemistry, Physics, among others. Additionally, we organised a series of engaging and enjoyable activities detailed in this report.

The revival of the chapter would not have been possible without the dedication of the former president, Camron Nourshargh, whose efforts were instrumental in reigniting interest and gathering an initial cohort of members. We are also immensely grateful for the unwavering support of Yann Amouroux (Director, Europe at Optica), and our Advisor, Professor Martin Booth, whose guidance has been crucial to our success.

Our ongoing aim is to build a strong community that connects optics and photonics students with industry, other research groups, and the global Optica community. A key initiative towards achieving this goal is to apply for the Optica Travelling Lecturer Grant in January 2025. This will allow us to host distinguished speakers, fostering academic dialogue and professional growth among our members. Our chapter's vision closely aligns with Optica's mission to promote and advance the fields of optics and photonics through innovation, integrity, inclusivity, and impact. We aim to uphold and amplify these values within our local and global communities by fostering interdisciplinary connections and showcasing cutting-edge research.

Looking ahead to 2025, our focus will be to build on the foundations established in 2024. We plan to expand our academic events to highlight and disseminate groundbreaking optics research at Oxford and beyond, thereby fostering a stronger connection between students and the broader optics community.



Figure 1: Group photo of Oxford Optica Chapter members during the Harwell Campus trip, February 2024.

Current Committee

The chapter is currently led by a dedicated team holding the following roles:

Role	Name
President	Maike Lenz
Vice-President	Sijing Zhong
Secretary	Sharon Morgan
Treasurer	Maria Villamil
Advisor	Prof Martin Booth
President Emeritus	Camron Nourshargh (President 2023)
Member at Large	Nathan Spiller
Member at Large	Ana Stuhec
Member at Large	Urban Mur

Goals and Achievements of the Past Year

In 2024, the Oxford Optica Student Chapter set two primary goals:

1. **Increase attendance at chapter events and raise awareness about the society.**
2. **Expand participation to include members from diverse departments across the University of Oxford.**

Goal 1: Increasing Attendance and Raising Awareness

To achieve this goal, we focused on organising frequent and engaging social events while prioritising strategic advertising efforts. These initiatives led to a significant increase in engagement:

- At the start of 2024, the chapter did not have a formal mailing list. By November 2024, we successfully built a mailing list comprising **88 members** from various disciplines.
- To enhance visibility, we designed and distributed eye-catching event posters, both digitally and around campus.
- Social events such as the Summer Picnic and Welcome Pub Trip consistently attracted attendees, contributing to a growing sense of community within the chapter.

Goal 2: Expanding Departmental Diversity

Recognising the need for interdisciplinary collaboration, we contacted multiple departments across the university to publicise our events via their mailing lists. This effort significantly diversified our membership base.

At the start of 2024, almost all chapter members were from the Department of Engineering Science. By the end of the year, we had successfully expanded our representation to include multiple members from the Departments of Chemistry, Physics, and Materials, as well as some from Maths and Experimental Psychology. This expansion was reflected in our events throughout the year.

While the Harwell Trip early in the year saw approximately 75% of participants from Engineering Science, subsequent events demonstrated a shift toward greater interdisciplinary engagement. For example, the Annual General Meeting (AGM) included attendees from Experimental Psychology and Materials. The Summer Picnic marked a significant milestone, with attendees distributed across departments: **25% from Engineering Science, 25% from Physics, 25% from Materials, 17.9% from Chemistry, and 7.1% from other departments.** This balance of participation is visually represented in the pie chart below, showing the diverse attendance across the university.

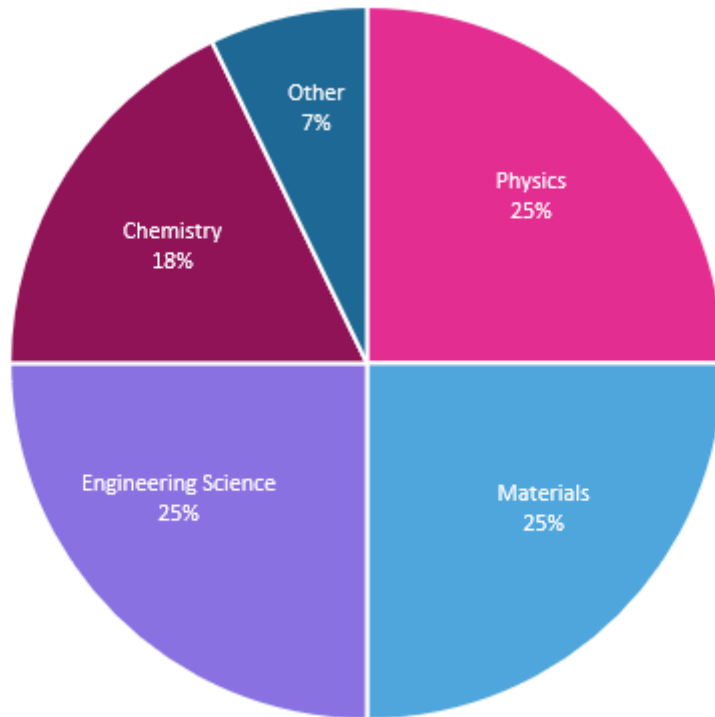


Figure 2: Departmental attendance at the Summer Picnic (2024). The chart shows the distribution of attendees across different departments: Engineering Science (25%), Physics (25%), Materials (25%), Chemistry (17.9%), and other/unknown departments (7.1%).

The trend of diversification continued with the Punting Event and Welcome Pub Trip, where members from Materials, Chemistry, Physics, and other departments were actively involved. These achievements reflect the chapter's successful efforts to build a thriving, inclusive community that spans across the University of Oxford.

Overview of Past Events

Over the past year, the Oxford Optica Student Chapter has organised a series of successful events, spanning outreach, academic engagement, and social activities. These events have fostered a strong sense of community, enhanced engagement with optics and photonics, and contributed to the growth of the chapter. Below is a summary of the events held in 2024 in chronological order.

Outreach at Oxford Brookes Science Bazaar

Date: 3 February 2024

Location: Oxford Brookes Headington Campus

This outreach event featured interactive demonstrations designed to engage young students (aged 5–16) and spark their interest in optics and photonics. Four of our chapter members showcased fundamental optical principles with interactive demonstrations, from refraction to total internal reflection, in a hands-on, accessible manner.

Key Highlights:

- Hundreds of students and parents engaged with our stall throughout the day.
- Positive feedback from the local community, inspiring future scientists.

Diversity Impact:

- The event was an opportunity to reach a diverse audience, particularly young students from various backgrounds, and promote inclusivity in STEM.

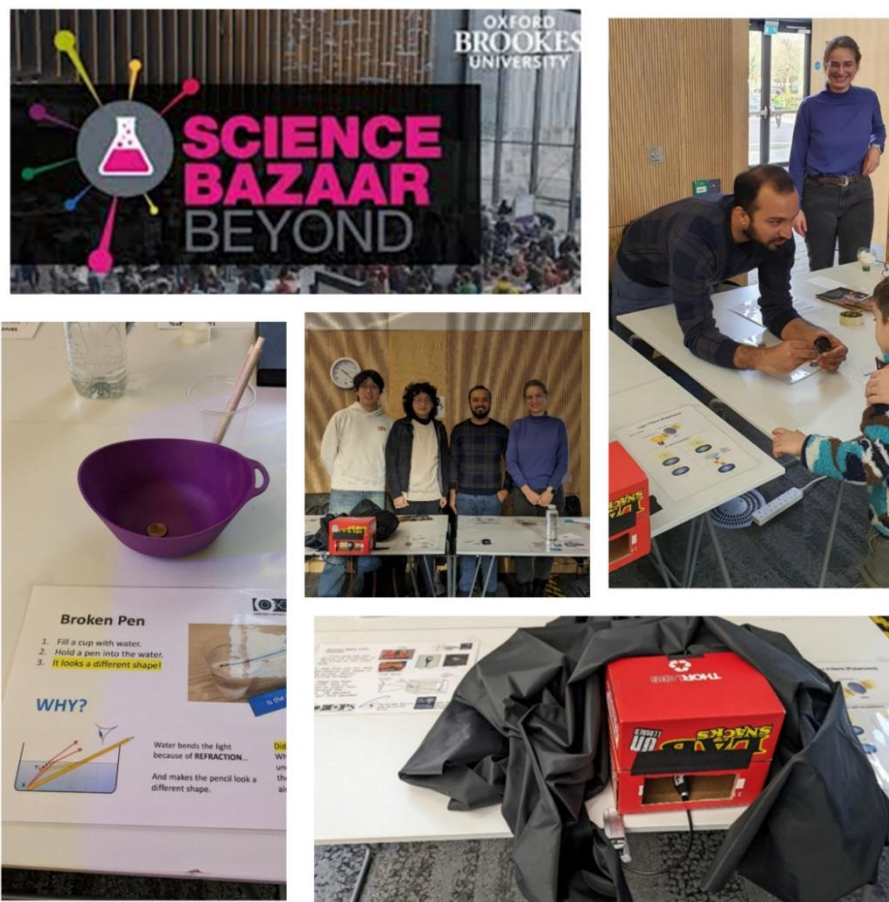


Figure 3: Chapter members engaging young students with hands-on optics demonstrations at the Oxford Brookes Science Bazaar.

Day Trip to RAL Harwell Research Campus

Date: 21 February 2024

Location: Rutherford Appleton Laboratory, Harwell Campus

A full-day trip to Harwell provided members with direct exposure to advanced optics research, with lab tours and academic presentations from leading researchers. The event also offered valuable networking opportunities and insights into cutting-edge optics research.

Key Highlights:

- 25 attendees participated in lab tours, networking, and academic talks.
- Engaging discussions with researchers showcased high-level optics applications.



OxOPS Harwell Visit

Experience the research and facilities at the Harwell Campus. Includes lab tours, talks, networking, and a poster session.

HIGHLIGHTS:

- Research Talks
- Rutherford Appleton Laboratory Tour
- Networking session

21 FEB 2024

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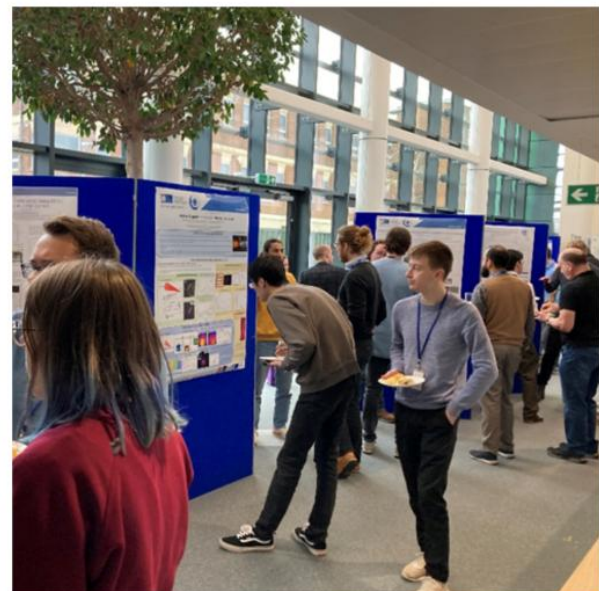


Figure 4: Members exploring cutting-edge optics research at the Rutherford Appleton Laboratory during our day trip to the Harwell Campus.

Annual General Meeting (AGM)

Date: 17 May 2024

Location: Thom Building, Engineering Science Department

The AGM marked a pivotal moment for the society, as members reviewed achievements, discussed the future direction, and elected a new committee. This open forum also encouraged members to propose ideas for events and activities to grow the chapter.

Key Highlights:

- Successful review of the chapter's progress and discussion of goals for 2024.
- Election of new committee members, ensuring continued leadership and direction.
- The event set the stage for future initiatives focused on interdisciplinary engagement and membership growth.

Diversity Impact:

- The election process and discussions focused on broadening the society's appeal to underrepresented departments and ensuring the committee's leadership reflected the diversity of the chapter's membership.



Figure 5: The new committee at the AGM.

Summer Picnic

Date: 27 June 2024

Location: University Parks, Oxford

The summer picnic offered a relaxed social setting for networking and informal discussions on research. By targeting under-represented departments, the event achieved success in expanding the chapter's membership, particularly within the Physics, Chemistry, and Materials departments.

Key Highlights:

- 28 attendees from multiple departments enjoyed an informal networking atmosphere.
- Future outdoor social events were encouraged by members due to the positive reception.

Diversity Impact:

- The picnic attracted attendees from diverse academic backgrounds, particularly members from the underrepresented Physics and Chemistry departments, helping to ensure a more inclusive and interdisciplinary society.



Figure 6: Informal networking and discussions about optics research during the Summer Picnic in University Parks.

Punting Event

Date: 2 August 2024

Location: Magdalen College, Oxford

The punting event combined a relaxing social experience with the opportunity for focused, small-group discussions. Themed drinks (Spectral Sippers) and a leisurely punting experience created an enjoyable atmosphere for building connections.

Key Highlights:

- 19 members participated in the punting session, fostering smaller-group interactions.
- Relaxed environment encouraged in-depth discussions on optics research and personal experiences.
- The event was seen as a valuable model for future casual, academic-themed socials.



Figure 7: Leisurely punting and socialising with fellow members in a relaxed atmosphere during the OxOPS Punting Event.

Welcome Pub Trip

Date: 30 October 2024

Location: Rickety Press Pub, Oxford

This welcoming event marked the start of the new academic year, attracting new postgraduate members and reconnecting with existing ones. The relaxed pub setting provided an opportunity for networking, informal discussions, and the recruitment of new members into the society.

Key Highlights:

- 24 attendees participated, with a significant portion being new postgraduate students.
- The event served as an effective ice-breaker, helping newcomers integrate into the society.
- Discussions focused on ongoing research, future events, and the chapter's growth strategies.

Diversity Impact:

- By targeting new postgraduate students, the event helped attract diverse members and foster a welcoming, inclusive environment for new members.



Figure 8: New and returning members networking and enjoying casual conversations at the Welcome Pub Trip in October.

Flashtalks Event

Date: 5 December 2024

Location: Oscar Wilde Room, Magdalen College

This event will featured short, 5-minute presentations by our members, offering them a platform to showcase their research or discuss innovative topics within the fields of optics and photonics. The audience ranked talks according to criteria such as engagement, structure, and content. The three winners received prizes including a hand-held microscope.

Key Highlights:

- A broad range of topics from quantum optics to fibre communications.
- Engaging discussions after talks encouraged connections between different optics researchers across departments.

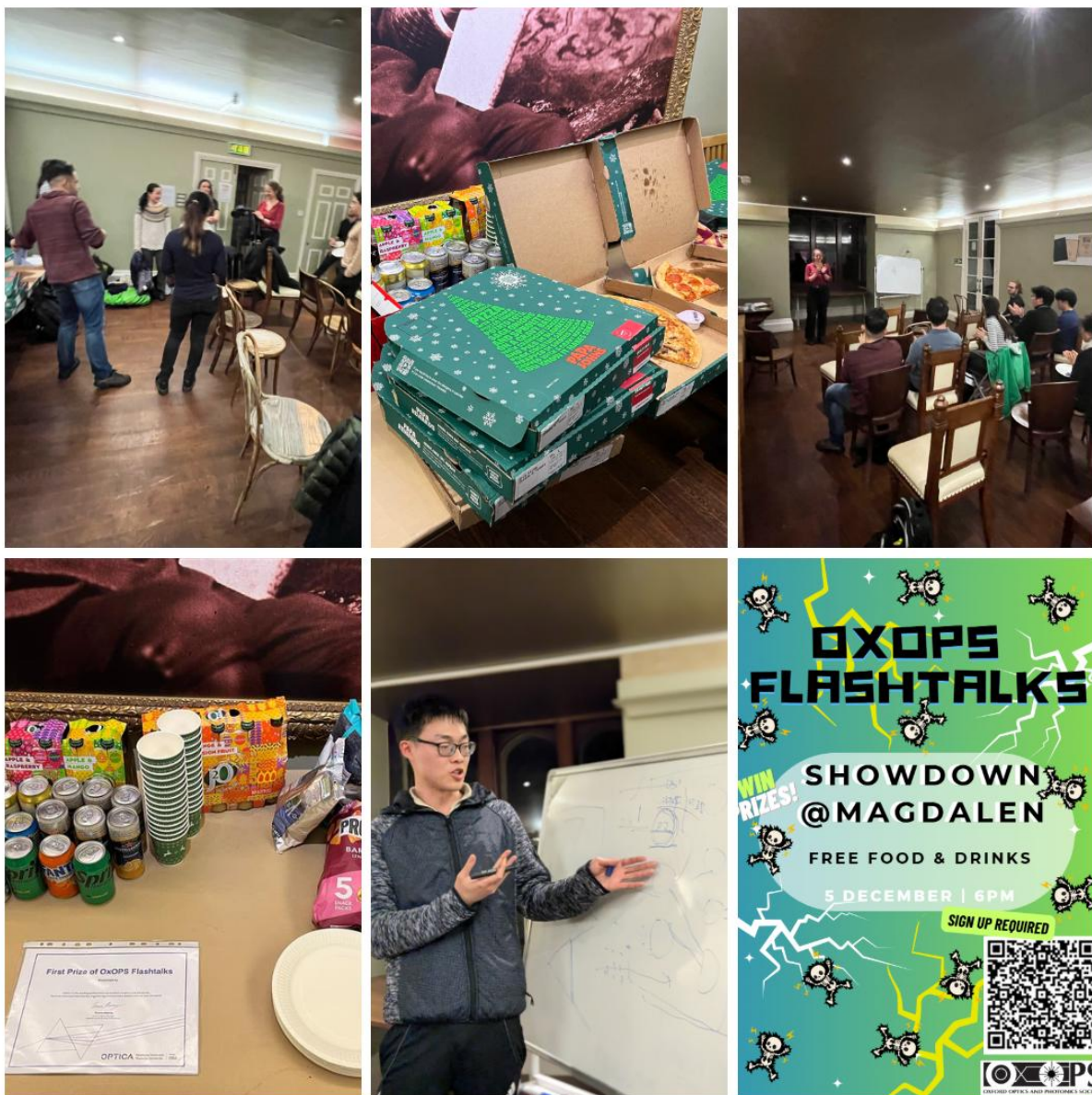


Figure 9: Speakers presenting at the Flashtalks Event.

Summary

The events held in 2024 were pivotal in building the chapter's presence within the university. They helped establish a strong foundation for community engagement, member recruitment, and interdisciplinary participation across many departments. Event posters played a crucial role in publicising these activities, with eye-catching designs that attracted attendees and contributed to the chapter's growing visibility. We have been able to consistently attract roughly 15-30 attendees per event, which is a big improvement on 2023.

We are delighted to have been able to offer a variety of events from through outreach to academic. Because of this, our members have had the opportunity to showcase their research, meet other researchers in related field, and promote and showcase optics and photonics within the local Oxford community outside of the university.

Looking ahead, the chapter will continue to expand its reach, foster connections between academic departments, and focus on enhancing the academic and professional development opportunities for its members. The success of these events demonstrates the chapter's potential to grow and to provide members with meaningful experiences in both research and community-building.

Upcoming Events

Plans for Future Activities

Looking forward, we have several key initiatives planned to continue expanding the reach of the chapter and provide valuable opportunities for our members. These events are designed to align with Optica's values of **innovation, inclusivity, integrity, and impact**, offering both academic and social benefits to our growing membership base.

1. **External Speaker Event**

We are planning to apply for the **Travelling Lecturer Grant** from Optica, with the goal of inviting a prominent external speaker from the optics community. This will allow our members to engage directly with leaders in the field, gain exposure to cutting-edge research, and strengthen our academic connections both within and outside of Oxford.

2. **Inter-Chapter Collaboration**

We are actively considering a **collaboration** with other Optica Student Chapters, which could involve joint virtual events or exchanges. Such collaborations would provide our members with opportunities to network across institutions and further foster a global community of optics students.

3. **Poster Session and Academic Presentations**

We plan to host a **poster session** where members can present their research projects. This will give our members the chance to share their work with peers, receive constructive feedback, and engage in more interdisciplinary interactions. We believe this initiative will enhance the academic profile of our chapter and support the professional development of our members.

4. **Social and Networking Events**

In addition to academic events, we will continue to host social and networking activities that bring together members from diverse backgrounds and departments. These informal gatherings, such as pub trips and outdoor socials, will help strengthen the sense of community within our chapter and maintain member engagement throughout the year.

These events will help us further our mission of creating a thriving, interdisciplinary community, and will support the development of our members as they progress in their studies and careers in optics and photonics.

More specific detail on future events is outlined in the *Proposed Action Plan for 2025* section.

Mission statement for 2025

As we move into 2025, the Oxford Optica Student Chapter is committed to building on the momentum of the past year. Having successfully raised awareness and engaged students across various departments, our primary focus for the upcoming year is to foster continued participation and formal membership within the Optica community.

A key part of this effort will involve encouraging students to sign up for Optica membership and participate more actively in chapter events. To support this, we plan to use the maintenance grant of \$500 to subsidise membership fees, ensuring that cost is not a barrier to participation. This will allow more students to join Optica and take full advantage of the opportunities our chapter offers.

In line with Optica's core values of **innovation, integrity, inclusivity, and impact (i4)**, our mission for 2025 is to provide members with opportunities for career development and engagement with cutting-edge optics research. We aim to organise more academic-focused events, including Flashtalks where members can share their research, as well as an External Speaker Event featuring an expert in the field through the Travelling Lecturer Grant, if awarded.

These events will not only highlight the dynamic research community at Oxford but also create valuable opportunities for career development and networking. Through these efforts, we seek to promote Optica's commitment to **excellence** and **diversity**, creating a space where students from all disciplines can contribute to and benefit from the vibrant optics and photonics community at Oxford and beyond.

In 2025, the Oxford Optica Student Chapter will continue to grow as a platform for collaboration, innovation, and knowledge exchange, helping to shape the future of optics and photonics in an inclusive and impactful way. We are dedicated to empowering the next generation of optics leaders and advancing the field through diverse, meaningful engagement with students at various levels throughout their careers.

Proposed Action Plan for 2025

Looking ahead, we aim to build on shifting our focus toward a more academic-centred program. Below is a proposed action plan for 2025 which uses some of the ideas outlined in the *Upcoming Events* section. Essentially, we plan to introduce a series of events that will emphasise the technical and research-driven aspects of optics and photonics, while still maintaining the social and community-building elements that have helped us grow.

January: Travelling Lecturer Grant for 2025

Objective: Plan and secure a travelling lecturer grant to bring in an external expert for a lecture or seminar in 2025.

Key Activities:

- **Research Potential Speakers:** Identify renowned professors, researchers, or industry leaders in photonics or a related field.
- **Grant Application:** Work on applying for the grant, ensuring that the topic aligns with the community's interests and current research trends.
- **Marketing and Promotion:** Plan how to promote the event, both internally and externally, to attract attendees.
- **Logistics:** Consider travel and accommodation for the lecturer, as well as a suitable venue for the event.

March/April: Photonics Day - Student Event

Objective: Showcase the latest developments in photonics at Oxford and provide students with a platform to present their work.

Key Activities:

- **Guest Speakers:** Invite leading academics or industry experts to talk about cutting-edge research.
- **Workshops Hands-on sessions** to engage students in photonics technologies.
- **Student Presentations:** Encourage students to present their own research, projects, or ideas.
- **Poster Session:** Allow students to present posters with their work on display.
- **Networking Session:** Facilitate interactions between students, academics, and industry professionals.

June: Academic and Research Collaboration Events

Objective: Foster closer connections both within and beyond the Oxford chapter.

Key Activities:

- Collaborative Events: Contact other student chapters to enquire about the potential to carry out a joint event showcasing labs and research going on at different institutions.
- Mentorship Programs: Create a formal mentorship network, where senior academics or industry professionals guide students through their research.
- Roundtable Discussions: Regular meetings where members can share research challenges and solutions.

July/August: Community and Social Integration Events (to maintain momentum)

Objective: Ensure a balance between academic focus and social interaction to maintain community engagement.

Key Activities:

- Social Mixers: Monthly or bi-monthly social events like happy hours, game nights, or outdoor meetups to create informal interactions.
- Collaborative Art/Photography Project: Engage students and faculty in a creative project related to photonics that could be showcased at an event.
- Community-Building Initiatives: Volunteer events to strengthen bonds within the community while contributing to local causes, such as outreach events.

September: Academic Symposia and Workshops

Objective: Continue fostering academic collaboration and knowledge exchange among the community.

Key Activities:

- Seminar Series: Regular academic seminars focused on different aspects of photonics, technology, or research methodologies.
- Interdisciplinary Workshops: Partner with other departments or fields to organise workshops that explore the intersection of optics & photonics with other domains (e.g., material science, AI, engineering).
- Skill-building Workshops: Offer training in specific tools, techniques, or methodologies relevant to students and professionals (e.g., lab techniques, programming for photonics).

November: End of Year Academic Showcase

Objective: Celebrate the progress made during the year, highlighting academic achievements and successful collaborations.

Key Activities:

- Awards Ceremony: Recognize outstanding achievements in research, mentorship, or community contributions.
- Research Fair: Students and faculty present their best work from the year in a fair-style event.
- Year-in-Review Panel: A panel discussion reflecting on key trends and developments in photonics and related fields over the past year.

Conclusion

As the Oxford Student Chapter moves into 2025, we are proud of the achievements and progress made over the past year. In 2023, we successfully re-established the chapter, and since then, we have expanded our membership across multiple departments and organised a series of engaging and diverse events. Our efforts have not only increased awareness of the society but also fostered meaningful connections within the Oxford community and beyond. Through outreach, social activities, and academic events, we've demonstrated the chapter's potential to create a lasting impact on the optics and photonics community.

Looking ahead to 2025, we remain committed to promoting Optica's core values of innovation, inclusivity, integrity, and impact. Our goals include further enhancing departmental participation, offering more academic opportunities through events like Flashtalks and an external speaker series, and continuing to build a vibrant and diverse community. With the support of the \$500 maintenance grant, we plan to subsidise Optica memberships for our members, ensuring broader access to the chapter and its activities, and fostering the professional development of our members through hosting more academic events.

By securing this funding, we aim to strengthen our efforts to provide career development, interdisciplinary collaboration, and exposure to cutting-edge research, while building a more connected, diverse, and engaged chapter membership base. We look forward to continuing our partnership with Optica to support the growth of the optics and photonics community at Oxford and contribute to the wider global network of Optica student chapters.