

# Hi-Lights from the Institute for Optical Science

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# A Message from our Director

As we step into 2025, I am excited to share the latest developments within the Institute for Optical Science (iOS). Over the past several months, we have seen continued growth in our programs, strengthened collaborations, and new opportunities to support cutting-edge research in the optical sciences.



One major highlight was the inaugural DoD-iOS

Workshop, hosted in collaboration with the Air Force Office of Scientific Research (AFOSR). This event brought together key federal representatives and academic researchers to explore advancements in 'Extreme Light' and foster meaningful dialogue within our communities. Building on its success, we look forward to expanding our partnerships and future workshop opportunities.

I am also pleased to announce two funding initiatives available to iOS members: the Agostini/DiMauro Visiting Scholar Funds and the iOS Collaborative Grants. These programs are rooted in the long-standing collaboration between Pierre Agostini and me. Both programs aim to support scholars and facilitate interdisciplinary collaborative research efforts through visits and workshops. Applications are open on a rolling basis, and I encourage our members to take advantage of these valuable resources.

Additionally, iOS has been well represented on the global stage. Our continued engagement with the X-lites network-of-networks has secured additional NSF funding to drive international collaboration in extreme light research. We are also proud to support students from US institutions to attend the upcoming 5th edition of the International Attosecond School in Erice, Sicily, which remains a cornerstone for training the next generation of researchers in ultrafast science. Please convey this information to interested students.



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# A Message from our Director cont.

It has also been a strong year for student engagement. The Optica Student Chapter at OSU is flourishing, hosting its first annual symposium, monthly faculty tutorials and organizing visits to national laboratories, including Argonne and Fermilab. Their enthusiasm for optics and photonics research is inspiring, and I encourage all students to get involved in this vibrant community.

Finally, I'd like to extend a warm welcome to our newest iOS members. Our community continues to grow, bringing together researchers from a variety of disciplines who share a passion for optical science. I look forward to seeing many of them share their work in our new iOS Member Research Series, which will highlight the exciting research being conducted across our institute. We are also planning an iOS science & social dinner gathering on May 2nd. The event will be hosted by the ElectroScience Laboratory and the agenda will include presentations from some of our members and 2023 Nobel Laureate, Pierre Agostini. This is open to all iOS members and a great opportunity to schmooze and nosh, so please mark your calendar!

As always, I want to thank our members for their contributions to our growing optics community. I welcome your feedback on future events, workshops, and initiatives. Let's continue to shape iOS into a thriving hub for innovation in optical science.

Lou DiMauro iOS Director



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# **Ohio Optical Frontiers Showcase**



Date: Friday, May 2, 2025
Time: 4:00 PM – 8:00 PM
Location: ElectroScience
Laboratory, Lobby (1330 Kinnear
Rd, Columbus, OH 43212)

iOS Members are cordially invited to our first social event, the "Ohio Optical Frontiers Showcase." We have planned an evening filled with science, networking, and great food.

We are honored to have Ohio State's 2023 Nobel Laureate, Pierre Agostini, as a speaker, along with representatives from various institutions within Ohio's regional optics community. This gathering offers a valuable opportunity to engage with colleagues, exchange ideas, and learn about local research in optical science. Refreshments and dinner will be provided.

While this event is primarily intended for iOS members, if a non-member is interested in attending, please contact <u>Jessi Middleton</u> and <u>Matt Boersma</u> for more information.

We look forward to seeing you at this exciting event. Please confirm your attendance by <u>signing up here</u>.



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# **Radiant Recaps**



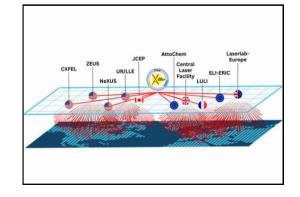
# iOS & AFOSR Host 1st Joint DOD-iOS Workshop

The 1st Joint DOD-iOS Workshop, held at The Ohio State University on July 9-10, 2024, brought together 42 participants, including 16 federal representatives from AFOSR, NRL, ARO, NSF, AFRL, and ONR, to discuss advancements in 'Extreme Light.' The event featured presentations from federal leaders and researchers, fostering collaboration between the DoD and the academic community.

<u>Read more</u>

## NSF Awards Funding for AccelNet's X-lites Project

The Institute for Optical Science and 10 international partners have received two more years of NSF funding to expand the Xlites network, accelerating breakthroughs in extreme light research. The initiative will encourage collaboration, support early career researchers, and broaden global engagement in cutting-edge science. Read more





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# **Radiant Recaps**

## Nobel Laureate Anne L'Huiller Visits Ohio State

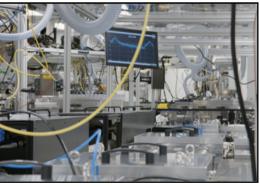
On August 15, 2024, Nobel Laureate Anne L'Huiller visited the Agostini/DiMauro Research Group. She toured the labs and engaged in discussions about the group's ongoing research. There was also a student meet-and-greet, where students had the opportunity to speak with Dr. L'Huiller about her groundbreaking Nobel Prizewinning work. Read more



## Ohio State's NSF-Funded NeXUS Facility Now Open for Ultrafast Science Research

Ohio State University has received a \$12M NSF grant to operate and expand the National Extreme Ultrafast Science (NSF NeXUS) Facility, enabling researchers to study chemical and material dynamics at the atomic and electron scale with ultrafast laser technology. The facility will support global users in fields like quantum materials, energy storage, and chemical dynamics.

<u>Read more</u>



## The Institute Welcomes Matthew Boersma as new Office Admin!

At the start of September, Matt accepted the position to join the Institute, where he will assist with administrative support to iOS, as well as assisting our Nobel Laureate, Prof. Pierre Agostini and our current Office Admin, Jessi Middleton.

Read more





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# **Radiant Recaps**

### Agostini-DiMauro Lab Featured in Two National Commercials!

The Ohio State University rolled out two national commercials during the start of football season. The goal of the commercial is to highlight research at Ohio State and the Agostini-DiMauro Lab was chosen to be featured.

<u>Read more</u>



# iOS Co-Founded event for Postdoc Research has stellar kick-off!

The Postdoc STEAM Exchange featured presentations from researchers in many fields, offering a lively, engaging seminar that provided great opportunities for collaboration, networking, and sharing ideas among over 40 attendees.

<u>Read more</u>



# The Institute Welcomes David Nippa as new Outreach Coordinator!

At the start of November, David accepted a position with the Institute, where he will assist with governance documents, procedures for awarding funds, expanding our audience both within and outside of OSU, and developing relationships with industry partners.

<u>Read more</u>





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# **Radiant Recaps**

# The Optica Student Chapter at Ohio State



Optica Student Chapter members visiting Argonne National Laboratory.

- On September 27, the OPTICA Student Chapter held its first annual symposium, featuring presentations from six graduate students across Physics, Chemistry, and Engineering. With over 30 attendees, the event facilitated networking and showcased innovative research in areas like harmonic generation, CO2 reduction, and transient absorption spectroscopy. Read more
- During fall break, OPTICA members traveled to Chicago to visit
   <u>Argonne National Laboratory</u> and <u>Fermilab</u>. It was an amazing
   opportunity to learn more about the future of optics and photonics!
   <u>Read more</u>
- On November 21st, OPTICA hosted a virtual tour of the SLAC National Accelerator Laboratory. Following the tour, participants engaged in a Q&A session with SLAC scientists.



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# **Spring Event Preview**



## **Frontiers in Chemical Physics Series**

This course offers an overview of both fundamental and applied topics at the frontier of spectroscopy. Held every other year during the spring semester, it provides a unique opportunity to explore the latest developments in the field.

View Series Schedule



# International Attosecond School - Erice, Italy

iOS is proud to support students and young researchers attending the International School on "The Frontiers of Attosecond and Ultrafast X-ray Science" in April 2025. This biennial event offers advanced training in the latest developments in attosecond science and technology.





The Institute for Optical Science (iOS) is pleased to announce two new funding opportunities for iOS members: the Agostini/DiMauro Visiting Scholar Funds (VSF) and the iOS Collaborative Grants (CG).

The VSF, made possible by a generous donation from Dr. Sailesh Chittipeddi (OSU Physics Ph.D., advised by Prof. Arthur Epstein), is inspired by the collaboration between Prof. Pierre Agostini and Prof. Lou DiMauro. Their research led to groundbreaking discoveries in optical sciences, culminating in the 2023 Nobel Prize in Physics awarded to Prof. Agostini for the discovery of attosecond light pulses.

The CG is supported by OSU's Enterprise for Research, Innovation and Knowledge (ERIK) to foster collaboration and increase iOS visibility. Applications are accepted on an ad hoc basis and evaluated by the iOS Executive Committee, with awards of up to \$6,000. Proposals on any topic that advance optical sciences in Ohio are encouraged, and those collaborating with NSF NeXUS facility scientists may apply jointly for experimental campaign support.

The VSF supports travel expenses for visiting scholars sponsored by an iOS member or reciprocal visits. The CG provides funds and administrative support for collaborative efforts, including organizing workshops or developing proposals.

<u>Learn more</u>



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# Spotlight on New Members



<u>Matt Boersma</u> Office Administrator Institute for Optical Science



<u>Christopher Ball</u> Research Scientist ElectroScience Laboratory



<u>David Nippa</u> iOS Outreach Coordinator ElectroScience Laboratory



<u>Michael Chini</u> Associate Professor Physics



<u>Jinghua Li</u> Assistant Professor Materials Science and Engineering



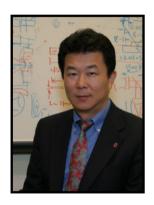
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# Spotlight on New Members



<u>Allen Yi</u> Professor Baker Systems Engineering



Rengasayee (Sai) Veeraraghavan Associate Professor Biomedical Engineering Ele



n <u>Shamsul Arafin</u> Assistant Professor Electrical and Computer Engineering



<u>Kevin Singh</u> Assistant Professor Physics



William (Memo) Carpenter Assistant Professor Chemistry & Biochemistry



The Ohio State University

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# Light Up our Inbox!

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## Amplify your voice:

Please send us **speaker and/or topic suggestions** for future seminars. The speakers may be local or non-local. You may even nominate yourself! Additionally, we welcome any **input and ideas for future events**.

You may reply to Jessi Middleton or Matt Boersma directly, or you may send an email to our Director, Lou DiMauro. (<u>dimauro.6@osu.edu</u>). Please copy <u>middleton.85@osu.edu</u> & <u>boersma.11@osu.edu</u> if you choose to email the Director.

We look forward to receiving your suggestions!



THE OHIO STATE UNIVERSITY

The Institute for Optical Science aims to create a <u>community of</u> <u>researchers</u> in the optical sciences extending beyond traditional academic boundaries identifying strengths in interdisciplinary photon science research.