Executive Summary:
In 2004, ICONS (ICFO Organization and Network of Students) was created by a group of motivated students as an umbrella organization for all ICFO Student Chapters. It is recognized and supported by Optical Society of America (OSA), International Society for Optics and Photonics (SPIE) and European Physical Society (EPS). Not only does ICONS aim to build and support the student experience within ICFO, it also ties ICFO Students to a larger international group of young scientists working to advance the understanding and science of light.

The ICONS Student Chapter promotes long term educational activities for students and helps to improve career opportunities by drawing them closer to the photonics community. An annually elected government spearheads the network’s activities which aim to intensify the interaction and collaboration of its members and between ICFO working groups. The organization of the chapter facilitates participation at all levels in order to achieve broad participation within the ICFO community.

This year, we introduced a novel workshop tailored at professional career development on Interview skills providing an in-depth insight into interview skills together with hands-on training to excel in job interview panels in and outside academia. We received highly positive feedback overall but the best returns we received for the mock interview session on the second day. The student participants could choose between the role of being an interviewee or an interviewer together with
experienced panel members. Especially the finishing PhD students confirmed the workshop was the perfect preparation for their upcoming job search.

The biggest challenge this year was to coordinate the knowledge transfer to the freshly starting members and the outgoing ones towards the end of the term since many of us had research stays abroad in addition to busy times in the lab.

**Contact Information:**
For general questions about our chapter, please email our chapter advisor, Prof. Dr. Valerio Pruneri, at valerio.pruneri@icfo.eu .
Website + Blog: [https://icons.icfo.eu/](https://icons.icfo.eu/)
Facebook Page: [https://www.facebook.com/pg/iconsicfo/](https://www.facebook.com/pg/iconsicfo/)
Institutional website + ICONS description/reference: [https://www.icfo.eu/lang/studies/icons](https://www.icfo.eu/lang/studies/icons)

**2018 - 2019 Officer Listing:**

![Pamina Winkler](image1)
Pamina Winkler  
President  
4th year PhD student  
pamina.winkler@icfo.eu

![Pilar Pujol Closa](image2)
Pilar Pujol Closa  
Vice-President  
2nd year PhD student  
pilar.pujol@icfo.eu

![Samyobrata Mukherjee](image3)
Samyobrata Mukherjee  
Secretary  
3rd year PhD student  
samyobrata.mukherjee@icfo.eu
Sarah Keary  
Treasurer  
3rd year PhD student  
sarah.keary@icfo.eu

2019 – 2020 Officer Listing:

Pilar Pujol Closa  
President  
3rd year PhD student  
pilar.pujol@icfo.eu

Arturo Villegas  
Vice-President  
1st year PhD student  
Arturo.Villegas@icfo.eu

Alexia Stollmann  
Secretary  
1st year PhD student  
Alexia.Stollmann@icfo.eu
Student and Community Membership
At the time of this report, there are 12 student members affiliated to the ICNS student chapter and there are currently about 30 students actively involved in our activities.

<table>
<thead>
<tr>
<th>Name</th>
<th>Email</th>
<th>Expected Grad Month/Year</th>
<th>SPIE Membership Expiration Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sandra De Vega</td>
<td><a href="mailto:Sandra.deVega@icfo.eu">Sandra.deVega@icfo.eu</a></td>
<td>Feb 2020</td>
<td>1 December 2019</td>
</tr>
<tr>
<td>Jonas Fischer</td>
<td><a href="mailto:Jonas.fischer@icfo.eu">Jonas.fischer@icfo.eu</a></td>
<td>Summer 2020</td>
<td>19 February 2020</td>
</tr>
<tr>
<td>Sarah Keary</td>
<td><a href="mailto:sarah.keary@icfo.eu">sarah.keary@icfo.eu</a></td>
<td>Feb 2021</td>
<td>9 October 2020</td>
</tr>
<tr>
<td>Samyobrata Mukherjee</td>
<td><a href="mailto:samyobrata.mukherjee@icfo.eu">samyobrata.mukherjee@icfo.eu</a></td>
<td>Feb 2021</td>
<td>8 October 2020</td>
</tr>
<tr>
<td>Jana Ockova</td>
<td><a href="mailto:jana.ockova@icfo.eu">jana.ockova@icfo.eu</a></td>
<td>October 2022</td>
<td>4 November 2020</td>
</tr>
<tr>
<td>Pilar Pujol Closa</td>
<td><a href="mailto:pilar.pujol@icfo.eu">pilar.pujol@icfo.eu</a></td>
<td>October 2022</td>
<td>8 October 2020</td>
</tr>
<tr>
<td>Ana Rodriguez Aramendia</td>
<td></td>
<td>October 2021</td>
<td>13 January 2020</td>
</tr>
<tr>
<td>Álvaro Rodríguez Echarri</td>
<td><a href="mailto:alvaro.rodriguez@icfo.eu">alvaro.rodriguez@icfo.eu</a></td>
<td>October 2021</td>
<td>5 June 2020</td>
</tr>
<tr>
<td>Lisa Saemisch</td>
<td><a href="mailto:Lisa.saemsich@icfo.eu">Lisa.saemsich@icfo.eu</a></td>
<td>October 2021</td>
<td>12 February 2020</td>
</tr>
<tr>
<td>Alexia Stollmann</td>
<td><a href="mailto:Alexia.Stollmann@icfo.eu">Alexia.Stollmann@icfo.eu</a></td>
<td>October 2023</td>
<td>6 November 2020</td>
</tr>
<tr>
<td>Arturo Villegas</td>
<td><a href="mailto:Arturo.Villegas@icfo.eu">Arturo.Villegas@icfo.eu</a></td>
<td>October 2023</td>
<td>12 November 2020</td>
</tr>
<tr>
<td>Pamina Winkler</td>
<td><a href="mailto:Pamina.winkler@icfo.eu">Pamina.winkler@icfo.eu</a></td>
<td>June 2020</td>
<td>16 May 2020</td>
</tr>
</tbody>
</table>

Activities Report

Conference: IONS BCN ’19
A team effort of Pamina Winkler, Sarah Keary, Sandra de Vega, María Sanz Paz, Lisa Saemisch, Carlotta Ciancico, Natalia Alves, Vindhiya Prakash, Samyo Mukherjee, Robin Camphausen, Pili Pujol, Sukeert, Jana Ockova, Álvaro Rodríguez Echarri, Roland Terborg

From June 26-29, 2019 ICNS welcomed students from 15 countries around the world to ICFO to participate in IONS BCN’19 – the conference in optics for, of and by students! IONS -The International OSA Network of Students – is a program initiated by the Optical Society of America (OSA) that encourages student chapters to organize and manage regional meetings which are focused on technical and professional development as well as on networking with peers and luminaries. Note that IONS started at ICFO in 2007, returned in 2009 and now has come back after 10 years.

IONS BCN’19 hosted more than 80 enthusiastic attendees spanning the master up to the professor level such as our four distinguished keynote speakers Lukas Novotny, Eleni Diamanti, Jenny Nelson and Viola Vogel who kicked off the sessions on nanophotonics, quantum optics, optical devices and biophotonics, respectively. In total the program included 28 student talks and a poster session of extremely high quality attracting intense discussions. It was our pleasure to discuss with Carlos Abellán, Co-founder & CEO at Quside, Luis José Salazar, Optics Payload & Operation Specialist at Aistech Space (both ICFO alumni), Maria Viñas, post-doc at the IO-CSIC in Madrid and OSA Ambassador 2019 and Simon Wall, GL at ICFO about their insights into career opportunities after the PhD. We also enjoyed the unique opportunity of visiting the Barcelona’s Supercomputing Center and of discussing why an MBA after a PhD could leverage your career at the prestigious ESADE.
business school one afternoon. On the last conference day Danny Krautz, another ICFO alumni, came to give us an encouraging insight into Zeiss’ R+D policies and ventures. It was clear that, with a majority of participants being students, questions and discussions flowed more freely both inside and outside the auditorium. Not only was it stimulating to see the participation of students in the scientific discussions but it was also fantastic to see our invited speakers joining our social events, for example, the gala dinner and the Barcelona city tour. At these events these renowned researchers were willing to interact with the students and give advice both on science and professional careers, providing a forum to unwind and network.

IONS BCN ’19 extended over four amazing days resulting in unforgettable memories. It was an equally great experience for the IONS organising team as every single attendee.

Cost: ~20 500€ (by funding from OSA, ICFO, Zeiss as main sponsors and many more)

And again, ICONS is hosting the EPS Young Minds Leadership meeting in May this year. So our chapter consisting of many new face has a new chance to develop their conference organizing skills.

Networking event across institutes: The first BIST PhD welcoming Cool-Off!
Team from ICFO: Sarah Keary and Pamina Winkler
On the 5th of April 2019, the student representatives from IRB, IBEC, CRG, ICN2 and ICFO 85 different research institutes) together with the BIST organization (the umbrella institution) successfully conducted a first joint BIST PhD welcoming cool-off in Barcelona.

More than 70 PhD students from six different BIST institutes gathered to tackle the challenge of a quiz and to network with their peers. The event started with a brief overview of BIST by Núria Bayó, the Head of Academic Programs & Organizational Effectiveness and then PhD representatives presented the research focus and student initiatives of their respective institutes.

Following the introduction, the fun began! The PhD attendees were divided into inter-institutional teams and had to find the answer to a science quiz as fast as possible. The organizers had conceived a multi-choice quiz with questions covering the research foci of the BIST institutes, using the online quiz platform Kahoot. Would you have known that Mendel demonstrated the role of heredity or that the h-bar is an important physical constant? For the last task, some students were asked to volunteer to draw something, while the others had to correctly guess what the drawing of the brave volunteers represented. Think how you would be able to depict a neuron, a laser pointer or an electromagnetic wave! At the end, the points for the teams were tallied. It was a close showdown and the three winning teams had to share the prize which consisted of a bottle of Cava and some chocolates which was the perfect trigger for the networking afterwards. To be repeated!

Cost: sponsored by BIST

The International Food Festival 2018(2019)
2018 Team: Samyo Mukherjee, Natalia Alves, Jana Ockova
2019 Team: Jana Ockova, Alexia Stollmann, Pilar Pujol
Now it has become a November tradition for ICFOians to indulge the gourmet in them at the International Food Festival (IFF) organized annually by ICONS. In 2018 six teams of ICFOians participated in the IFF and catered to nearly 160 people at the Restaurant Barbacoa Europa in Gava.

Long queues were seen as the teams started serving food but there were no complaints as their colleagues lined up eagerly to try some of the diverse fare on offer. While the regulars such as the Mexican, Indian and Iberian teams served their traditional cuisines this time too, the Swabian-Iranian team offered a novel culinary fusion by combining Persian influences with the south-west German kitchen. The US-Canadian team and the desserts team rounded off the cuisines on offer.

At the end of the event, participants who had eaten at 4 out of the 6 stalls could cast a vote for their favorite team. Of course, people who were part of one team could not vote for their own team. After nearly 160 people were sated and had cast their votes, the ballots were counted and we had our winners. The Swabian-Iranian team placed third, followed by the Mexican team in second place. The Indian team won the title for the day, having garnered a healthy lead over the other teams on the ballot.

Cost: self-sustained with expenses balanced by registration fees
In 2019 the planning was progressing excellently, and we had already 7 teams eagerly waiting to show off their cooking skills however we had to cancel last-minute to the weather forecast predicting rain all-day long. A real pity and quite untypical for Barcelona standards but we look forward to organizing the International Food Festival again in 2020 and we aim to hold it earlier maybe even shifting to October.

Workshops:

An introduction to control with Arduinos
ICONS responsible. Sarah Keary
For this hands-on workshop, ICONS called on the skills of two of our peers, Pau Gomez (PhD student) and Simon Coop (recent PhD graduate) of Prof. Morgan Mitchell’s group working in the field of Atomic Quantum Optics. They have experience working with Arduinos and using electronics to control various aspects of their experiments. A number of students requested that ICONS organises a workshop in this area for people interested in developing their skills or indeed learning something brand new that may be useful in their labs. Once we could agree on two dates for suiting everyone, the two boys designed and held a very successful workshop with over 27 participants.
When posed the question how does a drone fly? or, how does cruise control keep your car at a constant speed? Many people would make a good attempt at explaining the concept but few would be able to explain the finer details. That is where Pau and Simon step in. With the help of ICFO, providing some financial support for necessary equipment, Pau and Simon designed a four-hour workshop aimed at introducing the concept of a feedback system (aka a control system). With a room full of eager participants, the workshop kicked off with a very brief introduction from Pau on the general topic to be covered and the basics of an Arduino. Simon then ran through the document he had put together as a guide for the workshop. The aim of this event was to provide hands-on experience to the students with this in mind the theory was kept to a minimum, and teams of two or three students were formed, with the two experts walking around and helping each team as problems or questions arose.
Overall, this workshop was a real success and it should be repeated.

Within the same framework of running hands-on workshop split in two sessions we led one more on deep learning (by Samyo Mukherjee) to provide more applied programming skills from three members of the theory group of Maciej Lewenstein. Since the postdoc in charge is also more involved in teaching at the university we have already a follow-up workshop on quantum machine learning in the pipeline ready to be scheduled.
Costs: coffee break/workshop day (each ~30€), arduinos (in-house), additional equipment: ~184€

Workshop on Interview Skills
(see highlight of the year for description)
Organized by Pamina Winkler together with Alastair Cunningham from KTT
Cost: ~450€ funded by SPIE Activity Grant

Careers beyond academia talk: AYO – From A Student Idea To An Innovative Product Sold in 100+ Countries
ICONS responsible: Sandra de Vega
One of ICONS’ prime goals is to foster career development at ICFO. Through our Knowledge and Teck Transfer unit at ICFO we connected with Aleksandar Dimitrov. Alex totally fits into the picture of an open-minded young entrepreneur and based on an Economics background he co-founded AYO where he holds also the position as CCO currently. This startup was founded in 2015 and its first product won the Travel Retail Award of 2018 (voted by shoppers).
At ICFO, he gave a talk titled “From A Student Idea To An Innovative Product Sold in 100+ Countries” on the 13th of November that brought together more than 60 attendees. It was an insightful and interesting seminar, followed by a 30min-engaging discussion, in which he showed us a more technical part including key-points on how to start a high-tech company as well as sharing lots of tips and anecdotes in his career journey with us. An inspiring example for careers beyond academia.
Cost: coffee break ~30€
Regular events:

- Debates on Peer Review and What does a PhD in 2019 mean? (led by Samyo Mukerjee)
  Upcoming: Quantum Supremacy- What next? (led by Arturo Villegas)
  Cost: coffeebreak/debate ~30€

- Social Fridays also for ICFO events for e.g. hosted student schools as part of the networking (team effort and donation based – hence self-sustained)

- Intro to new PhDs candidates during the general interview hiring calls (2-3/year) and a talk about ICONS and student affairs is given by one/two ICONS board members

- PhD committee meetings (3-4/year) of which the current ICONS president (2018-19: Pamina Winkler) is a member

- Involvement in annual ICFO day (December) with a flashtalk/poster session (organised by one or two ICONS board members) Cost: 50-150€ for prizes

Encouraged to take up from previous years: PhD seminars (flashtalk format + Social Friday), SPIE travel lecturers

Fotos and more details please check on Blog and FB page
## Treasurer’s Report (since last report submission)

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
<th>Notes</th>
<th>Credit (Income)</th>
<th>Debit (Expenses)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/1/201</td>
<td>Previous Year’s Funds</td>
<td></td>
<td></td>
<td></td>
<td>$2525</td>
</tr>
<tr>
<td>30/04/2019</td>
<td>SPIE Activity Grant</td>
<td></td>
<td></td>
<td></td>
<td>$3025</td>
</tr>
<tr>
<td>18/10/2018</td>
<td>Workshop: An introduction to control with Arduinos</td>
<td>2 coffee breaks</td>
<td>$500</td>
<td>$3025</td>
<td>$2959</td>
</tr>
<tr>
<td>25/10/2018</td>
<td>Workshop: An introduction to control with Arduinos</td>
<td>Technical equipment</td>
<td>$203</td>
<td></td>
<td>$2756</td>
</tr>
<tr>
<td>13/11/2018</td>
<td>Careers beyond academia talk: AYO</td>
<td>coffee break</td>
<td>$33</td>
<td></td>
<td>$2723</td>
</tr>
<tr>
<td>14/12/2018</td>
<td>Annual ICFO day (flashtalk prize)</td>
<td>prizes</td>
<td>$170</td>
<td></td>
<td>$2553</td>
</tr>
<tr>
<td>18/01/2019</td>
<td>Workshop on Deep Learning</td>
<td>2 coffee breaks</td>
<td>$2*33 = $66</td>
<td></td>
<td>$2487</td>
</tr>
<tr>
<td>25/01/2018</td>
<td>Workshop on Deep Learning</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17/05/2019</td>
<td>Debate on Peer Review</td>
<td>coffee break</td>
<td>$33</td>
<td></td>
<td>$2454</td>
</tr>
<tr>
<td>06/09/2019</td>
<td>Debate on What does a PhD in 2019 mean</td>
<td>coffee break</td>
<td>$33</td>
<td></td>
<td>$2421</td>
</tr>
<tr>
<td>08/11/2019</td>
<td>Workshop on Interview Skills</td>
<td>2 coffee breaks, prizes, material</td>
<td>$362</td>
<td></td>
<td>$2059</td>
</tr>
<tr>
<td>29/11/2019</td>
<td>Workshop on Interview Skills</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*03/12/2019</td>
<td>Debate on Quantum Supremacy</td>
<td>Coffee break</td>
<td>$33</td>
<td></td>
<td>$2026</td>
</tr>
<tr>
<td>*13/12/2019</td>
<td>Annual ICFO day (poster prize)</td>
<td>Amazon voucher</td>
<td>$55</td>
<td></td>
<td>$1971</td>
</tr>
<tr>
<td>12/31/2019</td>
<td>Anticipated End of Year Balance</td>
<td></td>
<td></td>
<td></td>
<td>$1971</td>
</tr>
</tbody>
</table>

*Anticipated funding amounts based on chapter budget and last year’s costs/incomes.

## Conclusions and Recommendations

Being part of ICONS shows you how you can contribute to the student community and get in touch with all units of the institute providing you a deeper insight in the way it is functioning. In addition ICONS members can be very creative and are free to organize new formats of workshops and events tailored to the needs of the students as well as providing fun to overcome the ups and downs of a PhD. Furthermore we learn a lot in terms of transferable and leadership skills, how to take responsibilities, ask for grants, write reports, ... And on top of that we can benefit from travel grants to attend international conference to grow scientifically and to expand our networks and participate in fantastic leadership workshops.

Also it is rewarding to see how the more senior/outgoing ICONS members enthusiastically transmit their experience to convince newcomers to join the ICONS student chapter. So ICONS can keep on being highly engaged with the student community and we get feedback, speak up on the behalf of the PhD community so we are enabling the creation of a more interactive and connected community to face the challenges of a PhD (e.g. mental health). Lastly being strongly tied to the PhD community allows ICONS to tailor our new formats of activities specifically to their needs or we repeat successful events to provide as many PhD students the skills they want to obtain.

The outgoing ICONS members would like to highly encourage the rookie incoming members that you find a way of working together and motivating incoming students to get involved, to use the travel grants, to apply for grants and to maintain/improve communication among students and ICFO. You will do great and can count on the experience and support from the senior/outgoing members. : )