

## **Report on an Optics Outreach Program in Montréal**

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### **Introduction**

In accordance with its mission, the Student Chapter of the Optical Society of America (OSA) in École Polytechnique de Montréal organises numerous outreach activities to trigger the interest of students with 6-17 year of age in optics. In the last two years, these workshops have attracted over 450 students.

### **Methods**

Two of the outreach activities organised have received particular acknowledgements from the target audience: the Extreme Microwave demonstration and the gelatine telecommunication hands-on activity. Extreme Microwave is a spectacular presentation, appreciated by both students and parents, in which the amazing optical properties of the common kitchen microwave oven are showcased. The gelatine-telecommunication workshop, a hands-on activity intended for middle and high school students, teaches the principles of total internal reflection, light propagation in bent waveguides and optical couplers using a laser pointer as source and gelatine as waveguide. The participants then complete their study by assembling an optical telecommunication setup used to transmit music, for which they connect the electric circuitry and align the laser pointer towards the receiver.

### **Results**

Last year, 97% of the participants rated these activities 'very' or 'extremely' interesting, while finding the workshops to be captivating, complete and instructive. Some even affirmed that they now seriously consider pursuing studies in optics. The demonstrations and hands-on activities helped them gain confidence in their skills and realise that physics could mean more than equations.

### **Conclusion**

The described outreach activities have fulfilled the Chapter's objectives while providing an opportunity for students to interact with scientists and presenting optics concepts which may not be part of the students' regular school curriculum, leaving them with a human and attractive image of the field of optics.