Incident – Laser Exposure

During the course of a laser microscopy experiment using a Class 3b helium neon laser, the laser was misaligned after a mirror on the apparatus was bumped; the beam entered a researcher's eye briefly.

After contacting the Laser Safety Advocate for assistance, the researcher was taken for medical assistance; no injury occurred. The researcher had not received laser safety training and proper usage of laser protective eyewear was not enforced in the lab.

Following the incident, the principal investigator (PI) and the Laser Safety Advocate made changes to the apparatus, introducing a fiber optic laser conduit that removed the possibility of this incident occurring.

Lessons Learned

- **Always** wear laser safety eyewear when working with or around lasers. PIs and students should emphasize personal accountability and personal protective equipment (PPE). More information on safety eyewear in the lab can be found **here**.
- **Always** maintain situational awareness when working in the lab. In this incident, losing track of the situation led to the misalignment of the laser and the eye exposure. See **here** for more information on situational awareness.
- Johns Hopkins University requires that **all** researchers working with lasers obtain laser safety training (see **here**).

Contact Dr. Dan Kuespert, Laboratory Safety Advocate,
at 410-516-5525 or dkuespert@jhu.edu for
more information about this JHU Safety Note.

- Adding the fiber optic line to eliminate the mirrors and free laser beam is an example of **inherent safety**, an approach in which one removes or mitigates the hazard at the source rather than trying to implement protections against it. Always start your safety evaluation of an experiment by asking the question, "Can I eliminate this hazard altogether?"

Discussion Questions

- Have all laser observers, users, and operators in our lab received proper laser safety education? If not, what can be done to change this?
- How can we further encourage the use of PPE in our labs and how can accountability be maintained?

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