

PHOTON PBL News spoke with Heather Wade of IPG Photonics, Inc. about her background, experiences in the fiber optics field and views on career paths in the industry.

What was your introduction to photonics?

My introduction to photonics was at H.H. Ellis Regional Vocational Technical School, where I studied electro-mechanical engineering. My physics teacher Donna Goyette introduced me to a photonics learning kit. I found it intriguing because I had never heard of photonics nor seen anything like the kit.

How did you get to where you are today?

During my senior year of high school I received a scholarship from the National Science Foundation to study photonics and electronics at Three Rivers Community College. While in my last semester of school, my Photonics Professor Judy Donnelly informed students of job opportunities at IPG Photonics and brought our Advanced Laser Topics class for an educational tour of the company. I thought it seemed like a good place to start because it's successful in the fiber optic laser business.

What were some critical turning points for you that made you into the successful laser technician that you are today?

The most educational moments of being a laser technician are when there are challenges or issues when repairing a module or if there are failures when operating a laser module during testing. I also learn new information every time we work on a type of unit that we haven't had before. My greatest learning experiences usually result from common mistakes, for example, breaking or damaging fibers or parts or not hooking something up correctly. Both are good examples of not properly handling equipment or product! It can be very time-consuming and costly to repair a laser when some of the fibers to be worked are too short from being broken or damaged. Making mistakes like those happen usually only once or twice and then never again. One learns fast to be very careful and pay close attention when dealing with delicate fiber optics.

What are your job responsibilities at IPG Photonics?

I test and assist in the repair of various types of fiber laser modules, ranging from 50-Watts to 800-Watts power output. These modules are usually combined together in a bigger laser in another department to achieve higher output powers. IPG sells these higher power lasers to customers for various applications including, but not limited, to metal cutting, rock blasting and even deploying land mines. I set up each laser I will test on a test bench, connect power supplies, align the power head, hook up the cooling system and run the laser. Then, using the power meter and a voltmeter, I take measurements and

in some cases troubleshoot. I am also responsible for keeping the paperwork for each laser up-to-date and assisting with getting parts from stock and returning non-conforming parts.

What academic background do you think high school students need to be successful in a photonics technology associates degree program and the workforce?

A technical high school background helped prepare me for some of the program's equipment and terms, as well as the academic, scientific and technical concepts. If that's not an option, an introduction to physics and computer skills are a good start.

What advice would you give to young women thinking about entering this field?

I would say that more and more women are entering this field, so it's becoming more common to find them in photonics technology. Young women should not be discouraged when they seek employment if they find that there are only a few women compared to the number of males, because it creates more opportunity. Also, chances are that more women will follow in the next few years with the growing industry and education.

Where do you see the job opportunities for high school and community college students in this field?

Currently students who graduate with an associates degree or technical high school background have a likely chance of finding employment in production of photonic products. IPG most commonly starts new hires with associate's degrees in assembly and technician positions. To pursue a higher position in engineering, for example, a person would need more schooling.

What do you see as the current economic climate in the field of photonics?

I see photonics as a growing field with endless possibilities.

Heather Wade's former instructor Judy Donnelly is a Co-Principle Investigator for projects PHOTON PBL and PHOTON2; Donna Goyette is a PHOTON PBL and PHOTON2 participant. ■



Heather Wade testing a 100-Watt fiber laser in IPG's Laser Module Department's test lab.

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