Successful Job Placement for Technician Students

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OP-TEC
National Center for Optics and Photonics Education

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PREFACE

WHAT HAVE EMPLOYERS AND EXPERIENCED FACULTY MEMBERS LEARNED ABOUT STUDENT PLACEMENT?

A college degree—whether from a community college, a four-year college, or a university—no longer guarantees that student completers will have opportunities for rewarding employment, substantial income, purposeful and interesting work, and long-term career potential. To remedy this problem, institutions of higher education have begun offering certificates, internships, and other trusted credentials that ensure that their graduates will be employable.[1]

However, when students' postsecondary education includes substantial career preparation in science, engineering, technology, business, or health services, they continue to enter promising careers—with one caveat: these students must also be guided to understand their fields of employment, identify employers in their fields, gain experience in the workplace, and make thoughtful decisions about job opportunities and possible locations where they might live and work. Institutions and their faculty have a responsibility to not only educate and train students for work, but also provide them with information, experiences, job preparation tasks, and contacts with potential employers.

Every year, employers in fields such as photonics demand more new technicians than community and technical colleges are producing. Students who complete these education and training programs receive multiple job offers at very substantial salaries. But for technician students to make the best choices, they must be prepared to evaluate their own interests and needs, and they must be connected to relevant employers. Although most colleges give students some help as they search for jobs, the primary responsibility lies with the faculty. Experienced faculty members have become sensitized to this need and have developed experiences, tools, and strategies that prepare their students for rewarding and successful employment.

We asked college faculty members who have been teaching photonics technician students for periods ranging from eight to thirty years to share with us the strategies, experiences, and resources they use to help their students secure desirable jobs in a timely manner. We also asked photonics employers who have hired many technicians from two-year colleges to share with us the criteria they use to interview and select candidates for employment in their organizations. Here, we draw on the contributions and recommendations of these educators and employers to describe successful strategies, models, and tools for student placement.[2]

Some of the ideas we present may not be useful for all colleges. Their usefulness will depend on your institution's location, the technical emphases of your coursework, and the support available from your college, former students, and employer advisory committees. We recommend reviewing the various ideas, choosing the ones that are most appropriate for your situation, and developing a suitable Plan for Student Placement.

Daniel Hull, PI
OP-TEC

December 2017

[1] Selingo, Jeffrey, *The Future of the Degree* The Chronicle of Higher Education, 2017.
[2] These contributors are listed as coauthors of this monograph.

CONTENTS

SEVEN STEPS TO SUCCESSFUL JOB PLACEMENT FOR TECHNICIAN STUDENTS

Step 1: Take the Lead in Student Placement

Students who complete a two-year, associate degree technician program have demonstrated that they are interested in technology, are willing to work hard, and can understand and apply relevant math, science, and technology. They are also proficient at working with associated equipment and following hands-on lab procedures. These accomplishments should yield several rewards:

- a job that provides sufficient income for them and their families to live independently
- work they enjoy
- work assignments that engage them with equipment they find interesting and processes they find personally meaningful and fulfilling
- the opportunity to live in a desired geographical area
- opportunities to advance in their field through experience and/or further education
- the beginning of a rewarding, life-long career

These students must not only have the necessary experience and academic and technical knowledge, but also understand the nature of the workplace they will be entering; the variety of available job responsibilities; how to identify, qualify and apply for jobs; and how to succeed in their careers. Their college and program faculty should ensure that students learn these things from some combination of coursework, special assignments, internships, industry tours, and student clubs.

Colleges and faculty members must maximize employment opportunities for technician students. Most two-year colleges maintain a small organization that supports placement of student completers. This career center or placement office may offer students some job-search counseling and help in preparing a resume. The center may also facilitate job fairs and disseminate information on job openings. Typically, though, these centers offer the most help and are most effective for students looking for jobs in business, health, education, and services with familiar, local employers. Because of this emphasis, the dean, faculty, and industry advisory committee members of the technician education program must assume most of the responsibility for placement of student technicians.

Faculty members must take the lead in placing their students. In most cases, instructors and the program chair will need to lead efforts to help their students with preparation, job searches, applications, and interviews with potential employers. Photonics faculty members are the most qualified to lead these student recruitment efforts, because they are the ones who are familiar with the technology, their students' interests, and the necessary recruitment resources, which include college support, employer contacts, and assistance from advisory committee members and former students.

Step 2: Develop a Contact Database of Potential Employers

The annual demand from employers for new photonics technicians greatly exceeds the number of student completers.[3] In the last five to seven years, most students completing photonics technician programs at two-year colleges have received several offers of employment. The question is not whether jobs are available, but whether your students will be offered and will select the job that best help them develop a rewarding career. Employers of photonics technicians are located throughout the United States in large, metropolitan areas and in smaller communities.

The first step in helping students find the employment opportunities that are right for them is to compile and update a master database of organizations that hire photonics technicians. OP-TEC, MPEC, and LASER-TEC all maintain lists of photonics companies and organizations that hire photonics technicians, as do publishers of photonics trade magazines, regional centers or clusters, and technical societies such as SPIE, OSA, LIA, and IEEE-Photonics. Upon request these organizations will share specific information from their lists.

To complete your Employer Database, you'll need specific contact information for the appropriate technical managers of each organization, as well as its human relations department, including relevant names, phone numbers, and email addresses. You can solicit this information from current and former students, faculty members, administrators, Program Advisory Committee members, and organizations that have hired program alumni. The most useful and specific information on potential employers can often be obtained from organizations and supervisors who have previously hired student completers.

To help students identify the companies that might be right for them, organize your list by identifying each company's geographic location, whether it manufactures or uses photonics equipment, and the equipment or applications it specializes in. It is also important to know which of the listed organizations hire photonics technicians and whether they will have employment opportunities during the current year. Your database should also identify organizations that have previously interviewed your students and those who have hired program completers in recent years. Some program advisory committee members and former students may be able to help identify and classify potential employers.

Consider organizing your database into three categories:

1. Organizations and contacts that you found in other databases (e.g., OP-TEC, regional centers or clusters, and technical societies)
2. Organizations and contacts that have previously recruited or hired student completers, including information provided from previous students
3. Organizations and contacts provided by the Program Advisory Committee (identified by the member who supplied the information)

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[3] Illich, Paul, Hull, Darrell, & Ruggiere, Paul. (2012). *Industry Demand for Two-Year College Graduates in Optics and Photonics Technology: An Industry Survey of Current and Future Demand for Two-Year Degreed Photonics Technicians, Summary Report*. OP-TEC/UCF. Available at http://www.op-tec.org/files/pdf/2012_Needs_Assessment_Summary_Report_Revised_02222013.pdf.

Update your database annually, and each year, make your updated database available to student completers who will be searching for employment.

Step 3: Create a Technician Student Placement Plan

Faculty members can fulfill their important leadership role with a minimum of effort by developing a detailed plan containing a list of tasks, a schedule, and a set of student assignments. Faculty members then meet with student completers to share the plan, discuss job placement activities, make assignments, and set deadlines for students. Here is a model for such a plan:

1. Create a List of Recruitment Tasks
   - ✓ Reach out to employers
   - ✓ Issue job search assignments to students and follow up (see below for sample assignments)
   - ✓ Schedule employer and former student presentations to current first- and second-year students
   - ✓ Arrange student field trips to nearby employers
   - ✓ Schedule student and faculty meetings with employers at local, regional, and national society events
   - ✓ Schedule and arrange employer interviews with students
   - ✓ Set up counseling meetings between students and faculty members, as needed
   - ✓ Ensure that someone at the college receives and records information and contact data on students who accept jobs
2. Create a schedule for recruitment tasks
   - ✓ Orientation and assignments for first-year students: student's first semester
   - ✓ Orientation and assignments for completing students: last two semesters
   - ✓ Presentations, meetings, and employer tours: any time
   - ✓ Employer outreach: beginning of student's last semester
   - ✓ Employer interviews with completing students: last semester
   - ✓ Update college records on former students: annually
3. Issue student assignments (see examples on the next page)
   - ✓ Search, learn about, and select preferred photonics employers
   - ✓ Become familiar with photonics applications
   - ✓ Establish contacts with twenty-five photonics employers
   - ✓ Prepare and send resume to employers
   - ✓ Participate in job interviews
   - ✓ Select best job offer

Job Search Assignments for First-Year Students: Engaging with the Profession

Entering students are frequently required to enroll in courses that they may feel are unrelated to their career goal of a job in photonics, including remediation in mathematics and required courses in math, science, communications, and general studies. These are challenging courses for most students, and students often lose interest and lack motivation for high achievement. They ask questions such as, "Why do I have to learn this?" and "How will I ever use this?"

When new students' coursework is difficult or seems unrelated to their career goals, it helps to engage them in tasks and activities that help them discover organizations and applications of photonics. These activities stimulate their motivation to pursue their education and career training. Whenever possible, these new students need to join a group, such as a student laser club, that will engage them in career exploration and job search activities.

First-year students can engage in the following job search and career learning experiences:

1. Review monthly publications, such as photonics trade magazines (e.g., *Laser Focus World, Photonics Spectra, Biophotonics*) and periodicals from technical societies (*SPIE Professional, OSA Optics and Photonics News, LIA Today* and *IEEE Photonics Society News*). Faculty can receive these publications and display them in a student lounge area.
2. Monitor publication websites, subscribe to appropriate electronic newsletters, follow company social media feeds, and setup Google Alerts for topics of interest.
3. Create and maintain a LinkedIn profile.
4. Participate in a discussion of a topic described in one of these publications. Faculty members can suggest a topic and pose a question for discussion in the photonics student club.
5. Attend scheduled presentations by former students and photonics employers.
6. Identify at least twenty-five organizations engaged with photonics devices or applications. Contact them via email to determine whether and when they hire photonics technicians. Maintain a log of their responses.

Job Search Assignments for All Students: Discovering Applications

To help students discover which areas of photonics interest them, each month, a faculty member can assign students to explore the Internet to find and report on a video that describes a particular laser or photonics application area. Faculty members can assign a different application type each month in areas such as

- manufacturing
- materials processing
- medical systems and procedures
- defense/weapons
- energy/environment
- fiber optics communications
- ranging/tracking/mapping systems
- laser types or new developments

Students then share their findings, frequently viewing and discussing them in group or club meetings. They may also learn about photonics applications through employer presentations and employer-sponsored events such as student field trips.

Step 4: Encourage Internships and Part-Time Work to Help Students Find Their Best Fit

Internships and part-time jobs are extremely valuable in helping students decide if they enjoy and are capable of working in a specific field of photonics applications or with a specific employer. Internships and part-time employment can also help students and employers determine whether the student is suitable for a full-time job after graduation.

Most technician students are hands-on learners who understand by doing and enjoy seeing the physical, material results of their work. These students typically become excellent technicians, because their knowledge, talents, and skills are uniquely different from those of scientists and engineers, who are especially capable in theoretical and design knowledge and skills.

Because of their hands-on approach to work, most photonics technicians are lab- and equipment-oriented. They realize the most success, recognition, and personal satisfaction from developing, testing, operating, calibrating, and maintaining laser and optics components, equipment, and laboratories. However, they also need to be proficient in electronic instrumentation, recording of data and procedures, communicating with coworkers, working in teams, and problem solving.[4] Part-time jobs and internships are a great way for students to gain these practical skills.

Each employer of photonics technicians emphasizes specific equipment and procedures, and some may require in-depth knowledge and skills related to particular components, lasers, or related equipment. Most of this specialization will be learned on the job or in employer-provided training, but part-time jobs and internships can give students a head start.

Students who discover that they have a strong interest in one or more of the application areas described in the previous section should look for jobs or internships with employers in that sector or sectors. They can refine their choices further by selecting whether they prefer to develop or use the equipment that interests them.

While most technician students are lab-oriented, some prefer to work outside the labs. Some of these students may wish to seek employment in sales or as field service technicians. The developers and manufacturers of photonics equipment offer most of these kinds of jobs. Most field service technicians frequently travel to install, troubleshoot, or repair photonics equipment on-site. Field service techs usually work alone, away from their employers' worksites, in contrast to lab technicians, who work in groups or on teams at their employers' worksites to complete development, test, or application assignments.

[4] These proficiencies are described in Skill Standards for Photonics Systems Technicians (see Appendix E). Students and faculty will benefit from reviewing these "employer specifications" for photonics systems technicians. Students who succeed in two-year educational programs that teach these PST skills will meet the standards of most employers searching for photonics laboratory technicians.

Step 5: Tell Students about Further Training and Education for More Advanced Positions

After a technician has been with an employer for a period of time, he or she may have an opportunity for promotion to a job as a section leader or manager. Technicians who are promoted into supervisory or management positions will need additional training in supervisory skills and human resource information and policies; the employer may provide this training. Technicians interested in upper-level management or in creating and owning an independent organization should consider opportunities to articulate into a BS program in business management.

If students or working technicians determine that they prefer to be involved in engineering design, they will need to articulate to a BS engineering program at a four-year institution, which will require more in-depth math, science, and technical studies than those required in associate degree technician programs.

Step 6: Help Students Connect with Employers

Employer Search

Assign students to begin searching for possible employers beginning in their first year of study. Students can find job opportunities by searching the websites of the companies in your employer database. Jobs for photonics technicians appear different titles, including *technician, laser optics technician, optics technician, electronics technician, instrumentation technician, fiber optics technician, lab technician*, and others.

LASER-TEC has developed a very informative brochure, entitled "Where do Robotics and Photonics Technicians work". It is described in Appendix B. Students can access the information in this brochure by viewing http://www.laser-tec.org/discover-careers.html.

Job opportunities can also be found on the websites of technical societies such as OSA (http://www.workinoptics.com) and SPIE (https://spiecareercenter.org). Commercial websites such as www.indeed.com and www.monster.com also have listings, but it may be difficult to identify specific categories such as *laser technician* and *photonics technician* on these more general sites.

A final and very successful strategy that several colleges use is to send faculty and students to a national conference, such as Photonics West, to meet employers who are attending or exhibiting.

Initial Communication

Once students have identified potential job opportunities, follow-up phone calls or emails will clarify whether a particular opportunity is appropriate for completers of photonics technician programs. Assign each student to select at least ten organizations to contact. Their selections should be coordinated by the department to ensure that students do not duplicate each other's selections. If you have eight students, for example, they would contact a total of eighty different employers. Students should make phone calls or send email messages to ask the following questions:

- Do you employ photonics technicians?
- Do you anticipate that you will be hiring new technicians within the next twelve months?
- How many technicians do you anticipate hiring?

- What type of work will your new hires be expected to perform?
- What is the name and contact information of the person at your organization that should receive information and job applications for these positions?
- Will your organization conduct interviews with job applicants? Will the interviews be conducted on site, via telephone, or via Skype?

Let the students know that they may need to make additional efforts to receive a response. The information they learn should be shared with the department, which will compile it into a second database that department faculty can share with all interested students. Students who use the information to send applications should notify the department, so the department can track their progress.

Resumes, Cover Letters, and Application Forms

Assign students to prepare and send a resume and letter of introduction using the models provided in Appendixes C and D. We strongly recommend that a departmental faculty member or dean review each student's resume and letter to ensure that they are written clearly and correctly. We encourage faculty to follow up with letters of recommendation that emphasize students' enthusiasm, character, and soft skills, such as punctuality, work quality, and ability to work with others.

Some employers will respond by asking the student to complete the organization's job application form. Some employers will only want to receive the completed application form just before the interview. Students should copy the department faculty on all correspondence, including resume, letter of introduction, and job application. The department should keep this information confidential.

Interviews and Follow-Up

Typically, organizations within a few hours' travel time to the college will conduct interviews at the college. Some larger companies that are more distant will also conduct initial interviews at the college. Most organizations will ask the department to schedule these on-campus interviews and to provide confidential interview rooms. Interview times will vary from twenty or thirty minutes to over an hour per student. Some employers will interview all interested students. Some companies will choose to conduct initial interviews by phone or Skype.

To help students prepare for interviews, assign them the following preparatory tasks:

- Submit a resume and letter of introduction by the day before the interview, if they have not yet done so.
- Complete the employer-provided application form.
- Compile a list of references.
- Research the organization conducting the interview and prepare several questions to ask the interviewer. These questions should demonstrate the student's prior knowledge of the company and emphasize the student's interest in specific employment details.

The first interview or personal contact between the employer and the student is conducted for the purpose of screening candidates to select finalists. These screening interviews may be conducted by the company supervisor or a representative from the department of human resources. After

this initial interview, encourage students to send a follow-up letter or email message to indicate their continuing interest in the job opportunity, ask further questions, and provide any additional information that the employer has requested. Students should send follow-up letters within one week of the interview.

After employers have narrowed their list of candidates, they will typically interview preferred candidates a second time or invite them for a hosted, on-site visit before making a job offer. Students who receive multiple job offers should try to select and accept their preferred position as soon as possible. This promptness not only allows the employers to make additional job offers, if necessary, but also prevents the job offer from being rescinded because of the employer's need to fill the job quickly.

Step 7: Help Students Select the Best Job Offer

If students are choosing from among multiple job offers, encourage them to think about the following factors:

- Salary. Does the job provide a sufficient income for financial independence?
- Benefits. Does the job provide strong health insurance benefits, sick leave, and vacation time?
- Intrinsic rewards. Does the job involve a particularly interesting field of photonics and personally meaningful and fulfilling job assignments?
- Location. Is the job in a desired geographical area?
- Future opportunity. Does the job offer opportunities for advancement with experience or further education?
- The organization's reputation. Are faculty members familiar with the organization? Are any previous students current or former employees of the organization? Faculty members may be able to provide contact information for these former students, and conversations with them may reveal additional useful information.

A Note on Location

Most of the available jobs for photonics technicians will not be near the college or the student's current residence. Students who are preparing to search for jobs should consider whether and where they and their families are willing to relocate. They may want to consider the following questions:

- Do they prefer to live near family members?
- Would they find a particular area of the country enjoyable because of its unique recreational opportunities—for example, outdoor activities, cultural opportunities, or sports events.
- How would they feel about the long commutes that many urban areas require?
- Do they have health reasons, such as allergies, for preferring particular locations?
- Do some locations offer better opportunities for further education for their family members or themselves?

No one job offer may include all the positive attributes a student desires; students may need to decide where they are willing to compromise, taking into consideration their personal and family preferences.

Suggestions from Former Students on Job Search and First-Year Success on the Job

Sixty-four outstanding graduates of technician programs in colleges across the country have been inducted into the Photonics Alumni Council for Technicians (PACT). PACT members offer advice to student completers by describing their experiences searching for jobs and the lessons they have learned about succeeding at their first year on the job. These suggestions are compiled into two brochures that are described in Appendix E.

HELPFUL RESOURCES

Appendixes A–E offer helpful resources for you and your students to review:

- Appendix A: Photonics Systems Technician Skill Standards
- Appendix B: Brochure covering "Where do Robotics and Photonics Technicians Work?"
- Appendix C: Example resume
- Appendix D: Example letter of introduction
- Appendix E: Pamphlets offering advice from former photonics technician students who are successful in their careers

Make these pamphlets, brochure, sample resume and letter, and skill standards available to your students early in their programs so they can begin planning for a rewarding career in photonics that will inspire them to excel in their studies.

APPENDIX A: PHOTONICS SYSTEMS TECHNICIAN SKILL STANDARDS

Job Description:

- Photonics systems technicians (PSTs) work in industries whose processes and operations require the extensive use of optics and photonics components, equipment and devices to meet production or mission goals. Where photonics is an enabling technology, PSTs frequently integrate optical and photonics devices or subsystems into larger systems. PSTs have the responsibility of ensuring these devices operate within prescribed specifications with proper safety considerations, and are compatible and/or complementary with the entire integrated system.
- These technicians must know how optical and photonic devices operate and interface with the equipment or systems in which they are embedded. They must also understand how optics, photonics devices and subsystems enable equipment and systems to accomplish specific tasks.
- PSTs must have broad, working knowledge and skills of optics as well as electronics, controls, optomechanical and electromechanical devices/systems and basic laser/electro-optical safety, combined with their specialty knowledge and skills in photonics to efficiently and effectively repair systems, and operate, maintain, and calibrate photonics subsystems, and integrate these subsystems into full systems.

Critical Work Functions:

1. Measure characteristics of passive optical components, as well as their support and manipulating equipment.
   A. Identify, maintain, measure, and use prisms, mirrors, wedges, polarizers, filters, gratings, attenuators, waveguides, etc.
   B. Identify, maintain, and use plates, optical benches, rails, vibration-isolated tables, and other optomechanical components and equipment.
   C. Identify, maintain, and use holders of optical components, mounts, translation stages.
   D. Measure focal lengths, grating size, spot size, beam profiles, and beam divergence.
   E. Clean and store optics and optical support equipment.
2. Perform optical alignments, testing, installation, maintenance and operations for optical and photonics systems
   A. Establish optical axis, and position/align components to function along the axis according to specifications
   B. Measure and control beam alignment and output power stability
   C. Use and troubleshoot photometers, burn paper, and other methods for measuring beam characteristics
   D. Maintain and use spectrometers and interferometers, beam-shaping devices, laser beam delivery systems, and other passive optical systems

E. Determine and control efficiency of beam delivery optics and light coupling (input/output) between devices

3. Measure output characteristics of lasers and other light sources.
   A. Measure and analyze temporal characteristics: pulse shape, pulse duration, stability and pulse repetition frequency
   B. Measure and analyze spatial characteristics: beam diameter, beam profile, divergence
   C. Measure and analyze spectral characteristics: wavelength, bandwidth, operational (TEM) modes
   D. Use and maintain the following equipment: detectors, power meters, beam scanners, modulators, spectrometers and associated electronic equipment
4. Operate and maintain lasers and other photonics devices
   A. Operate and maintain the following laser types: HeNe, CO2, YAG, diode, fiber, excimer, argon
   B. Operate and maintain modulators for CW, pulsed, Q-Switched, mode-locked, and frequency doubled operation
   C. Operate and maintain beam scanners and pointers
   D. Calibrate, trouble shoot and repair electronic equipment such as power supplies, meters, and controllers
   E. Measure input/output characteristics of electronic and photonics devices and compare them to performance specifications
   F. Calibrate or adjust parameters to control laser output
   G. Communicate with manufacturer to service, calibrate and/or repair laser systems, or arrange for replacements
5. Operate and maintain other optical and light-emitting devices
   A. Operate and maintain spectrometers, interferometers, microscopes, trackers, scanners, sensors, etc.
   B. Operate and maintain LEDs, diodes, lamps, etc.
   C. Calibrate, adjust, modify, and repair aforementioned devices as required
   D. Communicate with manufacturer to repair or replace devices when necessary
6. Integrate optics and lasers into systems to serve in photonics applications
   A. Determine or assure electrical compatibility
   B. Determine and/or assure optical compatibility and proper alignment
   C. Determine and assure environmental compatibility
   D. Design, build, and/or install appropriate input/output interfaces between electrical systems, and between optical/electro-optical systems

E. Assure mechanical/structural compatibility
F. Measure and control optical input/output devices
G. Measure integrated system to assure proper operation
H. Understand, control, and assure safety of basic laser beam and non-beam hazards

7. Maintain a clean and orderly lab environment
   A. Organize and clean work area and equipment
   B. Record procedures and notes in a logbook
   C. Minimize trip hazards and other impediments in a lab environment
   D. Follow clean room procedures as instructed

Soft Skills

Employers highly value employees who are knowledgeable and experienced in project management, because they have acquired the following "soft skills":

- Leadership
- Planning
- Goal setting
- Teamwork
- Scheduling and time management
- Resource management (making maximum use of available time, budgets and effective tools)
- Setting and adhering to standards of quality in their work

Group projects and other tasks that facilitate these types of skills are encouraged as part of any curriculum.

APPENDIX B: WHERE DO ROBOTICS AND PHOTONICS TECHNICIANS WORK?

APPENDIX C: EXAMPLE RESUME

Name
Address
Phone: xxx-xxx-xxxx
Email: xxx@xxxxxx.xxx

Education

Current College **Cumulative GPA**: xxxx/4.0 **Major GPA**: xxxx/4.00

- xxxx Major – Completion Date
- Relevant Coursework: xxx,yyy,zzz, etc

Other colleges or Military Training

- List college, and subjects date-date
- List Military experience and training date-date

Projects (Related to Major)

Lab Projects

- Description date-date
- Results

Club Project

- Description date-date
- Results

Other (student outreach, recruitment at high schools)

- Description date-date
- Results

Experience (any internships, club work at college, etc. each followed by 1-2 bullet list)

Internships (Location, assignments) date-date

- Description
- Results

Relevant Work or Military Experience date-date

- Description
- Results

College and community activities date-date

- Description
- Results

Activities (Organizations and events outside of major – athletics, music, etc.)

- Description
- Results

Special Knowledge Skills and Abilities (your opinion of your strengths; select from examples below)

- Other technical knowledge and skills (computers, graphics, electronics, mechanics)
- Focus on quality of work, attention to details, problem-solving
- Communications: written and/or spoken
- Ability to plan ahead, work in teams, support the work of others
- Other???

APPENDIX D: EXAMPLE LETTER OF INTRODUCTION

Name
Address
Phone: xxx-xxx-xxxx
Email: xxx@xxxxxx.xxx

Date

Name, title
Organization
Address

Dear XXXXX:

I am currently a photonics technician student at XXX College in (city, state). I will be completing my studies on (date) and am searching for a job where I can contribute and benefit from my education and training in photonics. I understand that (name of organization) may be hiring new technicians, and I am interested in applying for employment.

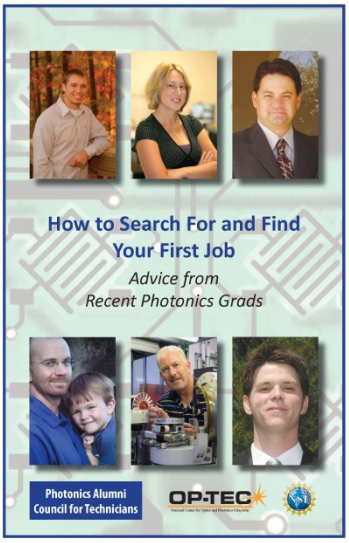
My resume is attached for your review and consideration. My photonics professor (or instructor) at XXX College is (name of instructor). You can contact him (or her) for a reference by using the following email address XXXX and phone number XXXX.

Please advise me if you require further information. My email address is XXXX, and my phone number is XXXX.

I am eagerly awaiting your response.

Name
Home Address

APPENDIX E: ADVICE FROM FORMER STUDENTS WHO ARE SUCCESSFUL IN THEIR CAREERS



Sixty-four outstanding graduates of technician programs in colleges across the country have been inducted into the Photonics Alumni Council for Technicians (PACT). PACT members help recruit new students into photonics programs by speaking at outreach events, providing information for one-page biographies that are distributed by student recruiters, and participating in the creation of 3-5-minute videos of their experiences. PACT members also speak to college clubs of photonics students.

In two OP-TEC brochures, PACT members offer their perspectives on life after graduation: they describe their experiences searching for jobs and the lessons they have learned about succeeding at their first year on the job. This appendix summarizes these two brochures; you can find copies of them to distribute to students at http://www.op-tec.org/alumni/photonics-alumni-council-for-technicians.

Brochure 1: *How to Search for and Find Your First Job*

TOPICS:

"Money isn't everything" but it helps.

- Salary
- Benefits
- Working conditions
- Opportunity to learn more

Where do you want to live?

- Personal or family needs
- Medical conditions (allergies) that restrict where you live

What kind of work do you want to do?

- In a lab or field work?
- Building, testing, installing, troubleshooting/repair, field work, sales?
- Work in a team or independently?

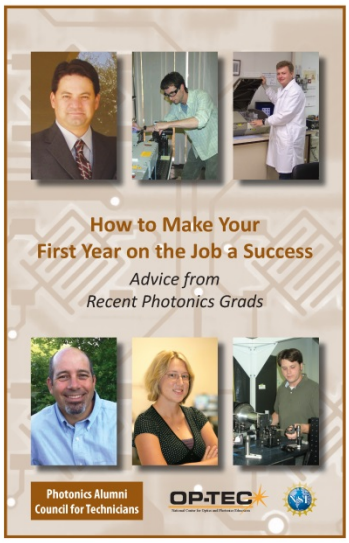
Have you prepared a resume?

- Find a suitable model format. Edit your work (spelling, grammar, etc.)
- Emphasize your strengths: technical skills, soft skills, etc.
- References

What do you hope will happen in the interview?

- Make a list of questions you want to ask.
- Prepare to respond and dress properly.
- Thank the interviewer; send a follow-up letter or card.

Brochure 2: *How to Be Successful in Your First Year on the Job*



TOPICS

You haven't learned everything when you graduate.

- Receive mentoring, study the manuals, and seek new learning opportunities.

Your mother doesn't work here; learn to survive on your own.

- Keep a positive attitude, comply with policies, give 120% effort and time.

You're personally responsible for the quality and timeliness of your work.

- Check your work, don't "fudge the data," meet deadlines.

Your value as an employee will depend on your soft skills, as well as your technical skills.

- Be a team player, develop problem-solving skills, and communicate effectively.
- Listen and follow orders.
- When possible, volunteer to represent your employer in the community or at charitable events.
- Look for opportunities to "give back" the resources and talents you have.
- Enjoy your life and your work.