



Jobs in Pharma, Biotech, and Green Industries

Leader Guide

Version 2.0

Jobs in Pharma, Biotech, and Green Industries: Leader Preparation

This leader guide is intended to be used in connection with a formal train-the-trainer process to help you get ready to facilitate *Jobs in Pharma, Biotech, and Green Industries*. It is not a word-for-word script; rather, it is an outline that will guide you through the successful delivery of this workshop.

The workshop was designed to be presented by someone who is not necessarily a professional facilitator. The workshop makes use of two main kinds of activities:



- **Facilitator presentation.** In this type of activity, you make a short (15 to 20 minute) presentation to the group about one key concept or skill. Your role in this kind of activity is to convey the key points briefly yet clearly, and to ask high-gain questions to involve participants. You will often find suggested questions in the Leader Guide. The icon for this kind of activity appears to the left.



- **Small group exercise.** In this kind of activity, participants work in pairs or small groups of three or four people each to apply a concept to their own world or to practice an aspect of a skill. In this kind of activity, your role is to explain the purpose and directions for the activity, to help each group as it works, and to lead a debrief at the end of the activity. Again, you will often find suggested questions for a debrief in this Leader Guide. The icon for this kind of activity appears to the left.

From time to time, the Leader Guide will provide directions to you about conducting an activity. Those directions will appear in italics in a shaded box, like the example below.

Directions to the facilitator will appear in this format.

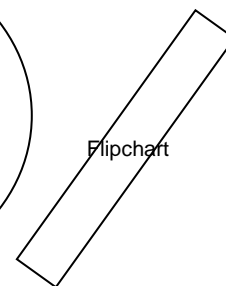
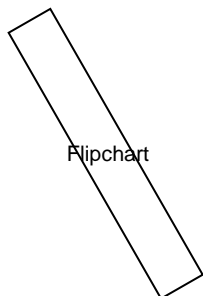
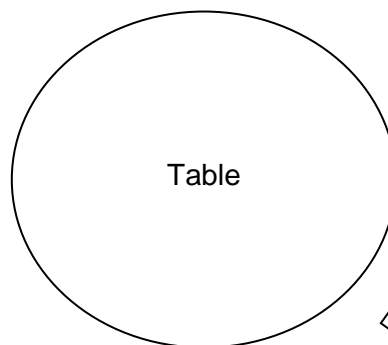
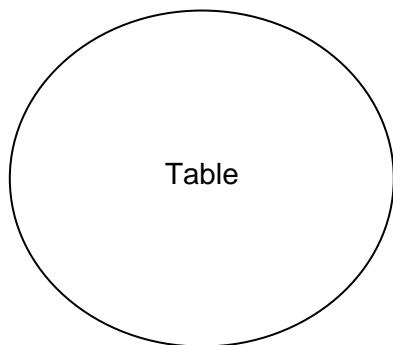
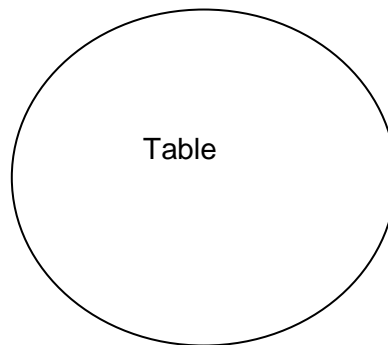
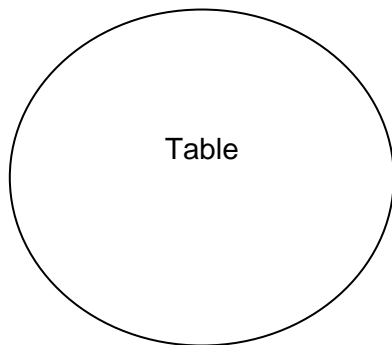
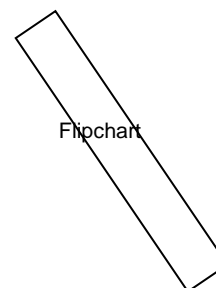
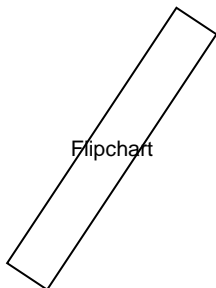
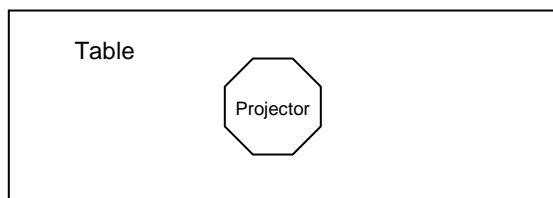
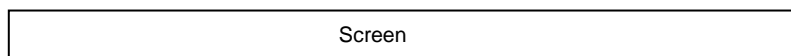
Workshop Timing

The purpose of this page is to provide a facilitator with an approximate schedule for the timing of the *Jobs in Pharma, Biotech, and Green Industries* workshop. The schedule assumes an 8:00 start.

Activity	PG page numbers	Activity time (minutes)
“So, What Kind of Job Ideas Do You Have for Me?”	2	15
Workshop Introduction	3-4	10
Jobs and the Job Market in the Pharma and Biotech Sectors	5-33	30
Transferable Skills in the Pharma and Biotech Sectors	34-35	20
“Have You Considered a Job in Pharma or Biotech?”	36	20
Break		
Jobs and the Job Market in the Green Sector	37-55	25
Looking at a Job Through Green-Colored Glasses	56	20
“Have You Considered Going Green?”	57	20
Highlighting Transferable Skills in a Resume	58-59	10
Critiquing a Resume	60	15
Highlighting Transferable Skills in a Job Interview	61-64	20
Helping a Client Get Ready for an Interview	65	20
Program Conclusion and Review	66	5

Room Setup

The following is a suggested setup for the room for the *Jobs in Pharma, Biotech, and Green Industries* workshop. The view is from above.



Materials and Equipment Checklist

The following is a list of the materials and equipment you will need to facilitate the workshop:

Facilities and Equipment

- Round table and chairs for participants
- Flipcharts and markers (at least two, and optimally four)
- Projector and screen
- Computer
- Table for facilitator

Materials

- Participant Guides (one for each participant)
- Handout 1: Client Profiles (one set of three for each participants, to be used as a handout)
- Handout 2: Sample Job Descriptions (one set of six for each participant)
- One set of large-format sticky notes for each table group.
- Program evaluations
- Donuts, candy and treats as available and allowed



Jobs in Pharma, Biotech, and Green Industries: Welcome

WELCOME participants to *Jobs in Pharma, Biotech, and Green Industries*.

INTRODUCE yourself in terms of:

- Name
- Experience with career counseling in general and One-Stop Career Centers in particular.

EXPLAIN that you will get to the opening preliminaries in a minute.

INTRODUCE the Participant Guide:

- It has everything you'll need to get the most out of our time together today.
- Take notes in it; it's yours to keep.

INVITE participants to introduce themselves (for no longer than 20 seconds each) to the group in terms of their

- Name and where they're from
- Current role in the One-Stop Career Center.
- One question they might have about jobs in pharma, biotech, and green industries (they might write this question on a sticky note and hand it to you after they read it to the group).



“So What Job Ideas Do You Have for Me ?”

INTRODUCE the activity:

- We'll get into the workshop preliminaries like learning objectives and overview in a couple of minutes.
- Before we do that, let's jump right into the issue that we're going to address together today—how to help clients get more and better ideas about potential jobs.

DIRECT participants to the PG and review the instructions for the activity.

CONDUCT the activity:

Divide participants into three small groups if you have not already done so, and pass out one set of “Client Profiles” to each participant. Assign one client to each group, and tell the groups to begin working. Ask each group to write its ideas on a flipchart page.

Call time after about 7 minutes and tell the first group to present its ideas. Post the flipchart pages on the wall.

Alternate opening activity: Distribute a copy of USA Today, a local newspaper, or a national magazine to each table group. Ask each table group to identify all the articles and ads that point to an increased interest in pharma, biotech, or green sectors, and explain the implications of that interest in terms of job opportunities. Extra points go to instances that point to two sectors.

DEBRIEF the activity:

ASK what's the average number of ideas you developed for each client?

ASK how broadly or narrowly did you look at possible industries? How much did you focus on their previous job titles versus their transferable skills?

MAKE A TRANSITION to the workshop introduction:

- We'll come back to these three clients several times throughout the course of our time together today.
- Before we do, let's take a minute to look at what our objectives are, and how we propose accomplishing those objectives.



Workshop Outcomes

DESCRIBE the key learning outcomes of today's session (*see graphic*).

Correlate the questions and issues participants identified earlier in their introductions to the Workshop Outcomes, and identify those that are in and out of scope.

Workshop Overview

DESCRIBE the structure and main topics of today's session (*see graphic*).

Correlate the questions and issues participants identified earlier in their introductions to the Workshop Overview.

MAKE A TRANSITION to the topic of Job Families in the Pharma and Biotech Sectors:

- We're going to start by looking at groups of jobs—or “job families”—in the Pharma and Biotech Sectors.
- We're going to consider these two sectors together because, as we'll see in a minute, the job families of the two sectors are very similar.

What Are Pharma and Biotech?

DEFINE the Pharmaceutical Sector (*see graphic*).

ASK what are some company names that come to mind when you think of the Pharmaceutical Sector? (*Discuss. Baxter, Merck, Novartis, Bristol-Myers Squibb, Bayer, Johnson & Johnson, Abbott Labs—all have major operations in New Jersey.*)

DEFINE the Biotechnology Sector (*see graphic*).

EMPHASIZE that the main difference between the two sectors is that the Pharmaceutical Sector uses chemical processes, while Biotechnology uses biological systems or living organisms to make its products.

ADD that another difference is that patent protection is more sustainable in biotech than it is in pharma.

ASK what are some company names that come to mind when you think of the Biotechnology Sector? (*Discuss. ImClone, Celgene, Biogen, Life Cell, Integra Life Sciences—all have major operations in New Jersey. Biotech companies tend to be smaller and less familiar to the general public than pharmaceutical companies.*)

EXPLAIN that pharmaceutical biotech products are simply drugs that are created using biological mechanisms as opposed to chemical mechanisms.

EXPLAIN that gene therapy products involve techniques for implanting genetic material into a cell, which shows promise for curing conditions like diabetes or sickle cell anemia.

ASK what are some examples of transgenic plants? (*Discuss. Insect resistant corn and cotton, herbicide resistant corn, rice with additional beta carotene, tomatoes with extended shelf life*)

ASK what are some examples of transgenic animals? (*Discuss. Cows that provide more milk, beef and pigs that provide more meat, disease resistant livestock, pigs that may someday provide body parts for transplants.*)

The Pipeline for New Products

INTRODUCE the product pipeline for pharma and biotech products:

- We can talk about the pharma and biotech sectors together because both are characterized by a very similar product development process, also known as the “product pipeline.”
- The product pipeline for the two sectors has six main segments:
 - Discovery (research), where new product ideas are developed.
 - Product Development, where the new product idea is tested and, if proven to be feasible, is readied for manufacture.
 - Manufacturing and Supply Chain, where the raw materials are transformed into finished products.
 - Quality Control and Regulatory Affairs, which ensures that internal and governmental standards are met.
 - Marketing and Sales, which is responsible for creating demand for the product and developing relationships with customers.
 - Bio-business, which are all the parts of the business that support the product stream functions.
- Each of these segments is considered one “job family.”
- Let’s look at each of these segments or job families, one at a time.

Discovery (Research)

DESCRIBE what happens in the Discovery (Research) phase of the product pipeline (*see graphic*).

DEFINE *informatics* as the science concerned with gathering, manipulating, storing, retrieving, and classifying recorded information—in this case, about the effects of new pharmaceutical compounds.

ADD that because most of the jobs in this job family require scientific training—sometimes advanced training—this is not an area that many of One-Stop clients will be a good fit for.

Discovery Job Groups

INTRODUCE the concept of job groups:

- As we've seen, each of the two sectors (pharma/biotech and green) can be described in terms of a set of job families.
- Each job family, in turn, is made up of clusters of similar jobs, which we will refer to as "job groups."

EXPLAIN that there are two main job groups in the Discovery job family:

- One is in Research, and
- The other is in Informatics.

DESCRIBE the characteristics of Research jobs (*see graphic*).

ASK how would you characterize the difference between basic and applied research? (*Discuss. Basic research is driven by a scientist's curiosity or interest in a scientific question. The main motivation is to expand knowledge, not to create or invent something. There is no obvious commercial value to the discoveries that result from basic research. Applied research is designed to solve practical problems of the modern world, rather than to acquire knowledge for knowledge's sake. One might say that the goal of the applied scientist is to improve the human condition.*)

DESCRIBE the characteristics of Informatics jobs (*see graphic*).

ADD that almost all informatics jobs require training in computer science, statistics, or molecular biology.

Discovery Job Examples

CITE examples of Research and Informatics jobs (*see graphic*).

ADD that when you see examples of jobs from each job family throughout this workshop, we will show the jobs requiring the most training at the top of the table, and the ones requiring less training and experience at the bottom.

Discovery Jobs: More Examples

DIRECT participants to the PG for more examples of Discovery Jobs in the Research and Informatics job groups.

CITE examples of three Research jobs (*see PG table*).

CITE examples of two Informatics jobs (*see PG table*).

MAKE A TRANSITION to the next job family, Product Development:

- Once the idea for a new product in pharma or biotech is developed, it's ready to move to the next segment of the pipeline, Product Development.
- Product Development is also referred to as Clinical Development, since this is where the potential new product is first tested on people.
- In Product Development, the new product idea is tested for safety and efficacy, and also assessed for its marketability.

Product Development

DESCRIBE what happens in the Product Development phase of the product pipeline (*see graphic*).

EMPHASIZE that testing and documentation are critical in the Product Development phase.

Product Development Job Groups

DESCRIBE the five job groups in the Product Develop job family (*see graphic*).

Product Development Job Examples

CITE examples of Product Development jobs (*see graphic*).

ADD that, again, most of the jobs in this job family require considerable education and experience in a scientific discipline.

Product Development Jobs: More Examples

DIRECT participants to the PG for more examples of jobs in the Product Development job groups.

CITE examples of two Medical expert jobs (*see PG table*).

CITE examples of two Clinical research jobs (*see PG table*).

CITE examples of a Biostatistics or Statistics job (*see PG table*).

CITE examples of two Medical writer jobs (*see PG table*).

CITE examples of two Clinical trial jobs (*see PG table*).

MAKE A TRANSITION to the next job family, Manufacturing and Supply Chain:

- Once the idea for a new product in pharma or biotech is tested for safety and efficacy, it is ready for the next segment of the process, Manufacturing.
- In Manufacturing and Supply Chain, the raw materials are transformed into finished products, and these products are in turn delivered to customers.

Manufacturing and Supply Chain

DESCRIBE what happens in the Manufacturing and Supply Chain phase of the product pipeline (*see graphic*).

Manufacturing and Supply Chain Job Groups

DESCRIBE the four job groups in the Manufacturing and Supply Chain job family (see *graphic*).

ASK if a client had a background in warehousing, which job family would come to your mind as you were advising that client? (*Discuss. Probably Transportation and distribution.*)

EMPHASIZE that of all the job groups in Pharma and Biotech, we will probably find most jobs for One-Stop clients in the Manufacturing and Supply Chain area.

Manufacturing and Supply Chain Job Examples

CITE examples of Manufacturing and Supply Chain jobs (*see graphic*).

EMPHASIZE that a number of the jobs in this job group do not require a college degree.

Manufacturing and Supply Chain: More Examples

DIRECT participants to the PG for more examples of jobs in the Manufacturing and Supply Chain job groups.

CITE examples of Planning and supplier management jobs (*see PG table*).

CITE examples of Production and operations jobs (*see PG table*).

CITE examples of Transportation and distribution jobs (*see PG table*).

CITE examples of Facilities jobs (*see PG table*).

MAKE A TRANSITION to the next job family, Quality Control and Regulatory Affairs:

- Manufacturing and Supply chain jobs are responsible for organizing the inputs to production, transforming those inputs into finished product, and moving the product to customers.
- Working in parallel with Manufacturing is the next job family, Quality Control and Regulatory Affairs.

Quality Control and Regulatory Affairs

DESCRIBE what happens in the Quality Control and Regulatory Affairs phase of the product pipeline (*see graphic*).

ASK why would QC and Regulatory Affairs play a larger role in Pharma or Biotech than it would in other kinds of manufacturing sectors (automobiles, for example)? (*Discuss. Pharma and Biotech are both highly regulated, and the products from both have to pass through a detailed and complex approval process.*)

QC and Regulatory Affairs Job Groups

DESCRIBE the five job groups in the QC and Regulatory Affairs job family (*see graphic*).

EXPLAIN the difference between Quality assurance and Quality control:

- Quality assurance jobs are focused on developing procedures that govern manufacturing processes.
- Quality control jobs focus on ensuring that the processes follow the procedures and produce products that conform to internal and governmental guidelines.

QC and Regulatory Affairs Job Examples

CITE examples of QC and Regulatory Affairs jobs (*see graphic*).

QC and Regulatory Affairs: More Examples

DIRECT participants to the PG for more examples of jobs in the QC and Regulatory Affairs job groups.

CITE examples of Quality assurance jobs (*see PG table*).

CITE examples of Quality control jobs (*see PG table*).

CITE examples of Validation jobs (*see PG table*).

CITE examples of Regulatory jobs (*see PG table*).

CITE examples of Dispensary jobs (*see PG table*).

MAKE A TRANSITION to the next job family, Marketing and Sales:

- Once Manufacturing and QC together create the product that meets all internal and external requirements, the spotlight turns to Marketing and Sales.
- Marketing and Sales are the functions responsible for creating demand for the product and developing relationships with customers.

Marketing and Sales

DESCRIBE what happens in the Marketing and Sales phase of the product pipeline (see *graphic*).

ASK why would product launch be especially important in Pharma and Biotech? (*Discuss. The patent clock starts running as soon as the product is approved.*)

Marketing and Sales Job Groups

DESCRIBE the two job groups in the Marketing and Sales job family (*see graphic*).

DEFINE the term *formulary* as the list of pharmaceuticals that are approved for purchase by an HMO or other customer organization.

Marketing and Sales Jobs: Examples

CITE examples of Marketing and Sales jobs (*see graphic*).

Marketing and Sales Jobs: More Examples

DIRECT participants to the PG for more examples of jobs in the Marketing and Sales job group.

CITE examples of three Marketing jobs (*see PG table*).

CITE examples of two Sales jobs (*see PG table*).

MAKE A TRANSITION to the next job family, Bio-Business:

- All of the previous job groups operate more or less in sequence, starting with Discovery at one end, and ending with Marketing and Sales on the other.
- Bio-Business is the set of departments and processes that support the all these other operations--product stream functions of the business.

Bio-Business

DESCRIBE what happens in the Bio-Business phase of the product pipeline (see *graphic*).

EMPHASIZE that the jobs in the Bio-Business job group, like those in Manufacturing and Supply Chain, tend to require skills that transfer from a broad range of other types of industries.

Bio-Business Job Groups

DESCRIBE the two job groups in the Bio-Business job family (*see graphic*).

Bio-Business Job Examples

CITE examples of Bio-Business jobs (*see graphic*).

Bio-Business Jobs: More Examples

DIRECT participants to the PG for more examples of jobs in the Bio-Business job group.

CITE examples of Communications jobs (*see PG table*).

CITE examples of Information systems jobs (*see PG table*).

CITE examples of Business development jobs (*see PG table*).

CITE examples of Finance and accounting jobs (*see PG table*).

CITE examples of Legal jobs (*see PG table*).

CITE examples of Human resource jobs (*see PG table*).

MAKE A TRANSITION to the next topic, trends in the Pharma and Biotech Sectors—especially in the New Jersey area:

- We've just looked at the six main job families in Pharma and Biotech, and some of the job titles in each of these families.
- Now, let's turn to trends in the two sectors, and especially what's happening in the two sectors in this area.

Trends in Pharma and Biotech

DESCRIBE some of the general trends in pharma and biotech (*see graphic*).

Pharma and Biotech in New Jersey

EXPLAIN that the New York/New Jersey area has the third largest presence in pharma and biotech in the country.

DESCRIBE the main trends in pharma and biotech in New Jersey (*see graphic*).

ASK what's the good news in these trends for us as One-Stop career counselors and for our clients? (*Discuss. There are lots of jobs in the sector that do not require a scientific education, and a good number that don't require a college degree.*)

Resources to Stay Current on Pharma and Biotech

DESCRIBE some of the resources that career counselors can use to keep current on trends and jobs in pharma and biotech (*see graphic*).

DESCRIBE more about what's available from each of these resources:

- The John J. Heldrich Center for Workforce Development associated with Rutgers University offers information on training and education partnerships that clients can use to prepare themselves for employment in this sector.
- Two of Standard & Poor's Industry Surveys one on Pharmaceuticals and the other on Biotechnology provide a detailed look at how these industries operate and what the outlook for employment is, year by year.
- You're already most likely familiar with the U.S. Bureau of Labor Statistics (www.bls.gov), a source of lots of useful information about employment trends, wages, and productivity. You can use the search feature to find all kinds of articles on pharma and biotech as well.
- You might also spend some time looking at the Life Science Career Alliance site (www.lscalliance.org). This is a website that you can use to link to other websites that will provide you detailed information about all kinds of trends, jobs and issues relevant to pharma, biotech, and related areas.
- The American Association for the Advancement of Science provides a search engine specifically for careers in science, and you can use that as a resource both to find specific job openings and to help a client brainstorm about possible career directions.

Transferable Skills: A Typology with Examples

INTRODUCE the concept of transferable skills:

- Many of our clients who may be qualified for these jobs in pharma and biotech companies do not have direct experience in these two sectors.
- One key to helping a client translate his or her previous experience into terms that are relevant to pharma and biotech is focusing on the client's transferable skills.

DEFINE the concept of transferable skill as the knowledge or ability to do something a client has developed in one job or industry that can be applied to another job.

EXPLAIN that we can look at competencies at four different levels (*see graphic*).

DEFINE personal effectiveness competencies:

- Personal effectiveness competencies are often referred to as “soft skills.”
- These are competencies that help someone get things done, including the ability to organize time and activities, to be dependable and professional and to influence people.

ASK what other competencies might fall under the heading of personal effectiveness? (*Discuss. Taking initiative and being a self-starter, demonstrating flexibility, attention to detail.*)

DEFINE academic skills we tend to learn in school, such as written and oral communications, critical thinking, and ability to learn.

ASK what other competencies might fall under the heading of academic skills? (*Discuss. Analyzing technical or scientific data, conducting and analyzing research, performing mathematical calculations.*)

DEFINE workplace skills as those competencies that contribute to success in accomplishing tasks in a work setting, including problem solving, teamwork, and leadership.

ASK what other competencies might fall under the heading of workplace skills? (*Discuss. Communicate with key people in the organization, developing and achieving objectives, delegate tasks to others.*)

DEFINE occupation specific skills as those that are required for success in a given job, such as the ability to maintain Quality Assurance logs for a quality assurance technician.

ASK what other competencies might fall under the heading of occupation specific skills? (*Discuss. Use tools and machines, follow detailed procedures, use software.*)



Transferable Skills in the Pharma and Biotech Sectors

INTRODUCE the activity:

- In this activity, we'll identify some of the transferable skills that might be required for positions across the job families of pharma and biotech.
- By the end of this activity, we will have created a “skills genome” for all of job families in these two sectors.

DIRECT participants to the PG and review the instructions for the activity.

CONDUCT the activity:

Return participants to their three small groups, and assign a primary and secondary job family to each group.

Suggest that they refer to the jobs associated with their assigned job families for ideas on transferable skills. Tell them to list the transferable skills for each job family on a separate flipchart, with the name of the job family on the top of the page.

Call time after about 12 minutes and tell the first group to present its ideas. Post the flipchart pages on the wall.

Alternative approach: If a team finds that examining an entire job family is too abstract, then you can suggest that they pick one job in a family and focus on the transferable skills that would make for success in that job.

DEBRIEF the activity:

ASK what were some of the transferable skills associated with manufacturing and supply chain? *(Discuss. Attention to detail, ability to follow procedures (SOPs); obtain, check, measure, weigh raw materials; set up equipment, clean equipment, inspect all stages of production, work effectively on teams.)*

ASK what were some of the transferable skills associated with quality control and regulatory affairs? *(Discuss. Attention to detail, written communication skills, work effectively on teams, understand and comply with SOPs and good manufacturing practices, calibrate testing equipment, perform accurate tests, maintain QA logs.)*

ASK what were some of the transferable skills associated with information systems? Human resources? *(Discuss. Information systems requires listening skills, ability to work in teams, problem solving, attention to detail, ability to work with computer hardware and software, for example. Human resources requires empathy, listening skills, oral and written communication, the ability to understand, follow and communicate policies and procedures.)*



“Have You Considered a Job in Pharma or Biotech?”

INTRODUCE the activity:

- Now, let’s apply what we’ve discussed about the pharma and biotech sectors to our jobs as career counselors and our One-Stop clients.
- To do that, we’ll return to the three hypothetical clients we focused on at the beginning of this session.

DIRECT participants to the PG and review the instructions for the activity.

CONDUCT the activity:

Assign one client portfolio to each team (the team should look at a different client from the one it focused on for the initial activity. Tell the teams to begin.

Call time after about 7 minutes and tell the first group to present its ideas.

DEBRIEF the activity in terms of the three Focusing Questions (see suggested answers below):

For the three clients, T.A. Grey, R. M. Black, and S.S. Greene, see suggested answers in Appendix 1 at the end of this Leader Guide.



Workshop Overview

SUMMARIZE the section about pharma and biotech:

- Sometimes when we are working with a client who does not have a lot of training or experience in science, we may tend to overlook the possibility of jobs in pharma or biotech.
- But as we've seen, New Jersey is the home of quite a number of large and successful pharma and biotech companies.
- And these companies, to the extent that they manufacture, do quality control, manage logistics, and perform administrative tasks, offer the same kinds of job possibilities as companies in other industries and sectors.

MAKE A TRANSITION to the next section of the workshop, Jobs and Job Families in the Green Sector:

- Now we can turn to another sector of our economy that shows more and more promise for jobs in our area—the “green” sector.
- The bad news about “green” is that it’s a little fuzzier around the edges than pharma in terms of definition.
- The good news is that we expect the sector to generate a large number of new jobs in the near to mid-term future.

What Is the “Green” Sector?

DEFINE the “green” sector (*see graphic*).

ASK if the green sector is the “least well defined” of the three sectors, what might be some problems with defining it? (*Discuss.*)

ASK what are some jobs that come to mind that involve protecting wildlife or ecosystems? (*Discuss.*)

ASK what are some jobs that come to mind that involve reducing pollution or waste? (*Discuss.*)

ASK what are some jobs that come to mind that involve reducing energy usage? (*Discuss.*)

ASK what are some jobs that come to mind that involve lowering emissions in general or carbon in particular? (*Discuss.*)

“Green” Job Families

INTRODUCE the four green job families:

- Because of the large number of widely varied nature of green jobs, we cannot use a single product development pipeline as the structural principle for organizing all of the jobs in this sector, as we could with pharma and biotech.
- Instead, we will talk about four broad groups of jobs (job families), based on what aspect of “green” the job focuses on or impacts.

LIST the four green job families (*see graphic*):

- Environment jobs are those that focus on protecting and improving the environment.
- Energy jobs are those that focus on creating and using energy more safely and efficiently.
- Infrastructure jobs are those that focus on creating and improving the efficiency of buildings, equipment, and transportation systems.
- Support jobs are those that focus on government regulation and development of specific expertise in environmental areas.

Three Types of “Green” Jobs

INTRODUCE the three types of green jobs:

- One way of organizing green jobs is in terms of the four job families we just looked at.
- Another way of talking about jobs in this sector is in terms of projected demand for a given job.

DESCRIBE the three types of green jobs (*see graphic*).

ADD that, as we’ll see, we will find examples of all three types of green job in each of the four job families.

Environment Job Groups

DESCRIBE the three job groups in the Environment job family (*see graphic*).

Environment Jobs: Examples

CITE examples of Environment jobs (*see graphic*).

Environment Job Groups: More Examples

DIRECT participants to the PG for more examples of jobs in the Environment job group.

CITE examples of Agriculture and forestry jobs (*see PG table*).

ASK what other kinds of jobs come to mind when you think of Agriculture and forestry jobs? (*Discuss. Farmers and ranchers, purchasing agents for agricultural products*).

CITE examples of Environmental protection jobs (*see PG table*).

ASK what other kinds of jobs come to mind when you think of Environmental protection jobs? (*Discuss. Landscape architects, soil and water conservationists*).

CITE examples of Recycling and waste management jobs (*see PG table*).

ASK what other kinds of jobs come to mind when you think of Recycling and waste management jobs? (*Discuss. Hazardous materials removal workers*).

ASK what might be some good news in this table for our One-Stop clients? (*Discuss. Many of these jobs require only a high-school diploma, or an associate's degree.*)

Energy Job Groups

DESCRIBE the four job groups in the Energy job family (*see graphic*).

Energy Jobs: Examples

CITE examples of Energy jobs (*see graphic*).

Energy Job Groups: More Examples

DIRECT participants to the PG for more examples of jobs in the Energy job group.

CITE examples of Energy and carbon capture and storage jobs (*see PG table*).

CITE examples of Energy trading jobs (*see PG table*).

CITE examples of Renewable energy generation jobs (*see PG table*).

ASK what other kinds of jobs come to mind when you think of Renewal energy jobs?
(*Discuss. Power storage and workers and managers, power distribution workers and dispatchers*).

Infrastructure Job Groups

DESCRIBE the three job groups in the Infrastructure job family (*see graphic*).

Infrastructure Jobs: Examples

CITE examples of Infrastructure jobs (*see graphic*).

Infrastructure Group Jobs: More Examples

DIRECT participants to the PG for more examples of jobs in the Infrastructure job group.

CITE examples of Green construction jobs (*see PG table*).

ASK what other kinds of jobs come to mind when you think of Green construction jobs?
(*Discuss. Welders, plumbers, landscape architects*).

CITE examples of Manufacturing jobs (*see PG table*).

ASK what other kinds of jobs come to mind when you think of Manufacturing jobs?
(*Discuss. Industrial engineering technician, robotics technician*).

CITE examples of Transportation jobs (*see PG table*).

ASK what other kinds of jobs come to mind when you think of Transportation jobs?
(*Discuss. Shipping, receiving, and traffic clerk; supply chain manager*).

ADD that the good news about Infrastructure jobs—like Environment jobs—is that they span a broad range of educational backgrounds, and include a large percentage of “increased demand” jobs.

Support Job Groups

DESCRIBE the two job groups in the Support job family (*see graphic*).

Support Jobs: Examples

CITE examples of Support jobs (*see graphic*).

Support Job Groups: More Examples

DIRECT participants to the PG for more examples of jobs in the Support job group.

CITE examples of Government and regulatory jobs (*see PG table*).

ASK what other kinds of job titles come to mind when you think of Government and regulatory jobs? (*Discuss. Urban planners, environmental engineers, compliance managers.*)

CITE examples of Research, design and consulting jobs (*see PG table*).

ASK what other kinds of jobs come to mind when you think of Research, design, and consulting jobs? (*Discuss. Training and development specialist, wholesale and retail buyers.*)

Five Trends in “Green” Jobs

DESCRIBE five trends in green jobs (see *graphic*).

ASK what kind of jobs and job families might be affected by Trend 1? (*Discuss. Energy efficiency jobs in the Energy job group, and Green construction jobs in the Infrastructure job group.*)

ASK what might be the impact of Trends 2 and 5 on advice you might give to a younger client looking at career options? (*Discuss. There is projected to be an increase in demand for people who can work in utilities positions—both in the skilled trades as well as in engineering.*)

"Green" in New Jersey

DESCRIBE the situation for green jobs in New Jersey (*see graphic*).

ASK what's the good news and bad news about the points on this graphic? (*Discuss. However promising, the "green revolution" has yet to produce an avalanche of new jobs in New Jersey or anywhere else for that matter. But this area is expected to be a hotbed once things do start to happen in the economy, relative to other parts of the country.*)

ASK what would you add to these points from your own experience? (*Discuss.*)

Resources to Stay Current on “Green”

DESCRIBE some of the resources that career counselors can use to keep current on trends and jobs in the green sector (*see graphic*).

ADD that another important resource is the [what are we calling the web-based reference resource?]

ASK what other resources are you familiar with that might be useful to other One-Step career counselors? (*Discuss.*)



Looking at a Job Opening Through Green-Colored Glasses

INTRODUCE the activity:

- We'll come back to our three hypothetical clients and expand their job search to the green sector in just a few minutes.
- Before we do, let's spend some time looking at some job descriptions for some real "green" jobs in terms of the job families and job groups we've just discussed.

DIRECT participants to the PG and review the instructions for the activity.

CONDUCT the activity:

Give each participant a copy of Handout 2 (the set of six job descriptions). Tell them to read all six quickly, but assign each team two job descriptions to focus on for this activity. Ask them to record their answers to the Focusing Questions on a flipchart page, and tell them to begin.

Call time after about 10 minutes and tell the first group to present its ideas. Post the flipchart pages on the wall.

DEBRIEF the activity in terms of the five Focusing Questions (see suggested responses below).

For the six job descriptions, see suggested answers in Appendix 2 at the end of this Leader Guide.



“Have You Considered Going Green?”

INTRODUCE the activity:

- Now, let’s apply what we’ve discussed about the green sector to our jobs as career counselors and our One-Stop clients.
- To do that, we’ll return to the three hypothetical clients we focused on previously.

DIRECT participants to the PG and review the instructions for the activity.

CONDUCT the activity:

Assign one client portfolio to each team (the team should look at a different client from the one it focused on previously. Tell the teams to begin.

Call time after about 7 minutes and tell the first group to present its ideas.

DEBRIEF the activity in terms of the three Focusing Questions (see suggested answers below):

For the three clients, T.A. Grey, R. M. Black, and S.S. Greene, see suggested answers in Appendix 3 at the end of this Leader Guide.

Workshop Overview



SUMMARIZE the section about the green sector:

- As we've seen, the bad news about "green" is that it's a little fuzzier around the edges than pharma in terms of definition.
- But the good news is that we look for this sector to generate a large number of new jobs in the short to mid-term time frame.

MAKE A TRANSITION to the next section of the workshop, Crafting a Resume for One of These Sectors:

- Because you're all experienced career counselors, you're familiar with helping clients develop and improve their resumes.
- So we don't need to spend a lot of time on this subject.
- There are, however, a few ideas to share about resumes for these two sectors.

Crafting a Resume: Some Thoughts

DESCRIBE some suggestions for crafting a resume for jobs in these sectors (see *graphic*).

ASK why would quantitative language be especially appropriate for jobs in these sectors? (*Discuss. Many of these jobs put a premium on quantitative skills.*)

ASK what might be an example of a sector-specific term for someone applying for an insulation installer position? (*Discuss. Mention membership in industry organizations, like the National Installation Association, for example. Other terms might include Apparent Thermal Resistivity, Cellular Elastomeric, etc. Many of these technical terms can be found on in glossaries on internet resources.*)



Critiquing a Resume

INTRODUCE the activity:

- Now, let's take a minute to practice helping a client polish his or her resume with respect to a specific green job.
- Because you all have considerable experience with the fundamentals of resume preparation, we're going to focus more on strategy (like identifying and highlighting transferable skills) than on formatting and the like.

DIRECT participants to the PG and review the instructions for the activity.

CONDUCT the activity:

Remind them which hypothetical client they are supposed to be focusing, and ask them to select one of the job descriptions that best fits that client on to focus on (add that there may be more than one). Then tell the teams to begin.

Call time after about 7 minutes and tell the first group to present its ideas.

DEBRIEF the activity:

Grey: Best fit would be Marketing analyst or Production planner and expediter. The current resume has a good Summary section. But you might suggest that Grey reframe the Objective statement (replacing consumer goods with manufacturing), expand description of work done in internship, and perhaps add more about coursework in Marketing and Operations Management.

Black: Best fit would be Call center customer service representative. The current resume has a good emphasis on computer skills, good emphasis on communication and customer service skills. You might suggest that the client reframe the Objective statement and the whole resume for less emphasis on health care. You might also suggest that the client shorten the Experience section, deleting Business Office Clerk position.

Greene: Best fit would be General maintenance engineer, Production planner and expediter, or Manufacturing team leader. The current resume has good details about Greene's manufacturing experience. By way of improvements, you might find out more about the client's familiarity with computers. The resume also needs a statement of Objectives or Summary. Finally, you might ask the client more about his or her experience with safety in previous positions.



Workshop Overview

INTRODUCE the next topic in the workshop, Preparing for an Interview:

- The business of the resume, as you know, is to get an interview for the job.
- The next hurdle, typically, is to make a great impression during the interview itself.
- That's the next topic we'll address in this session.

Preparing for an Interview

EXPLAIN that, as all experienced professionals, One-Stop career counselors don't need to review all the basics of interviewing skills.

ADD that as with the resume, we'll focus more on the strategies for refining a client's performance in an interview for these sectors.

LIST two guidelines for helping a client prepare for an interview (*see graphic*).

EXPLAIN that we'll look at each of these in a little more detail.

Behavioral Interview Format

REVIEW the topic of the Behavioral Interview format:

- Before being hired, your client will be typically talking to someone representing the hiring company either on the phone or face to face.
- More and more people involved in hiring decisions are using an interview format known as the Behavioral Interview.
- The more familiar the client is with this format, the more successful he or she can be answering the interviewer's questions.

INTRODUCE the structure of the behavioral interview question:

- Questions in a behavioral interview will, of course, vary depending on the position in question.
- But in general, they all tend to have the same three-part structure.

DESCRIBE the format of a behavioral interview question (*see graphic*).

EXPLAIN that the structure of the behavioral interview question is based on the assumption that previous behavior is the best predictor of future behavior.

ADD that behavioral interview questions lend themselves better to “soft-skill” competencies than to competencies that are more easily measured in other ways.

ASK what might be a transferable competency for an manufacturing team leader job, for example? (*Discuss. Ability to resolve conflict between two team members, for example*).

ASK what would be a kind of situation that a client might develop into an answer to this behavioral interview question? (*Discuss.*)

Doing the Homework

INTRODUCE the second topic in preparing for an interview, Doing the Homework:

- Some people underestimate the importance of doing some basic research on the hiring company whenever possible.
- All other things being equal, an applicant who displays a knowledge of the business of the hiring company has an advantage over the competition.

EXPLAIN that a client can investigate a hiring company at two different levels:

- The industry that the company is in, and
- The company itself

DESCRIBE some of the issues that a client can investigate at each of these levels (see *graphic*).

ASK what kind of resources could a client access to get the answers to some of these questions? (*Discuss. The company's own website, Yahoo Finance, Google Finance, and other web search resources.*)



Helping a Client Get Ready for an Interview

INTRODUCE the activity:

- Let's return to our hypothetical clients one last time.
- This time, we'll look at how we might help the client get ready for an interview for a green job.

DIRECT participants to the PG and review the instructions for the activity.

CONDUCT the activity.

Tell them to go back to the job description they looked at in the previous activity. Ask them to record their thoughts on a flipchart page. Tell them to begin.

Call time after about 7 minutes and tell the first group to present its ideas. Post the flipchart pages on the wall.

DEBRIEF the activity in terms of the Focusing Questions.

Because each group's suggestions will depend on the job they match their client with, there are no "best" answers to this activity. Listen for the group's ability to identify the most relevant transferable competencies, to differentiate between those competencies that lend themselves to behavioral interview questions and those that do not ("soft-skills" work the best), and to identify some of the basic research issues a client might focus on before going to an interview.



Workshop Review

REVIEW the main structure and main topics of this workshop (*see graphic*).

Appendix 1: Suggested Answers for Pharma and Biotech Jobs

T. A. Grey

Potential Jobs	Competencies	Developmental Options
Marketing research analyst (Marketing)	Data collection and analysis	MBA for promotion to Product manager position
Product manager (Marketing)	Project planning and management	Usually requires MBA for promotion for big pharma; may not be required for smaller biotech.
Communications specialist (Bio-Business, Communications)	Experience with development of promotional materials	Courses in Marketing Communications

R. M. Black

Potential Jobs	Competencies	Developmental Options
Clinical trial assistant (Clinical research)	Organizational ability and attention to detail Ability to disseminate and collect data from patients Familiarity with medical environment	Clinical data associate (requires BS or RN degree)
Clinical document assistant	Understanding of medical terminology and records Proficient in electronic tools Attention to detail	Clinical document associate (requires BS or RN degree)

S. S. Greene

Potential Jobs	Competencies	Developmental Options
Manufacturing associate (Manufacturing and supply chain)	Familiarity with manufacturing principles and processes	Manufacturing manager (may require completing a BS degree probably). Associate degree useful for biotech.
QA document administrator (Manufacturing and supply chain)	Process setup experience Experience with quality processes	QA document specialist or Manager (BS in science, plus 3 years experience)
QC technician (Manufacturing and supply chain)	Experience with QC processes and techniques Attention to detail	Quality control analyst or supervisor (BS in science would be an advantage).
Information systems tech (Bio-Business, Information systems)	Familiarity with computer science and programming	Probably would require more computer training and experience for entry level to this job.

Appendix 2: Suggested Answers for Green Job Descriptions

Health and Safety Associate

- Job family and group: Infrastructure (Manufacturing) (could also be Support)
- Subcategory (increase demand, enhanced skill, new and emerging)
- Transferable skills: Problem solving, training, communications
- Next step: Manager, Health and Safety

General Maintenance Engineer

- Job family and group: Infrastructure (manufacturing or green construction) or Energy (energy efficiency)
- Subcategory (enhanced skill)
- Transferable skills: Communication skills, mechanical skills, customer relations skills
- Next step: Maintenance supervisor

Call Center Customer Service Representative

- Job family and group: Support (research/consulting)
- Subcategory (increase demand)
- Transferable skills: Oral communications, problem solving, ability to understand and follow procedures, familiarity with computers
- Next step: Customer service manager

Production Planner and Expediter

- Job family and group: Infrastructure (manufacturing) or Infrastructure (transportation)
- Subcategory (increase demand)
- Transferable skills: Problem solving, process analysis, coordination of processes and planning, written communications, computer skills
- Next step: Logistic analyst, logistics manager, manufacturing manager

Marketing Analyst

- Job family and group: Infrastructure (manufacturing) or Support (consulting)

- Subcategory (enhanced skill)
- Transferable skills: Analytical ability, written and oral communications, data collection, computer skills, business acumen
- Next step: Marketing manager, manufacturing manager

Manufacturing Team Leader

- Job family and group: Infrastructure (manufacturing)
- Subcategory (increase demand)
- Transferable skills: Interpersonal communications, problem solving, planning and organizing
- Next step: Manufacturing manager or Department manager

Appendix 3: Suggested Answers for Jobs in Green Sector

T. A. Grey

Potential Jobs	Competencies	Developmental Options
Financial quantitative analyst (Research, Design, Consulting)	Data and financial analytical skills	MBA in Finance Courses in risk analysis and assessment
Green marketing	Project planning and management	MBA needed for promotion to this position
Marketing manager	Liaison with Operations	
Logistics analyst (Energy efficiency)	Academic courses in operations management	Logistics manager or General and Operations manager MBA probably needed for promotion to these positions
General and operations manager (Energy efficiency)		

R. M. Black

Potential Jobs	Competencies	Developmental Options
Support customer service representative (Green manufacturing or infrastructure)	Communication and problem solving skills Ability to perform multiple tasks simultaneously	Customer service manager Call center manager
HR assistant	Communication skills Ability to explain and interpret policies and procedures	BS degree required for promotion to HR associate or manager in big pharma, maybe not for a smaller biotech

S. S. Greene

Potential Jobs	Competencies	Developmental Options
Team leader (Green manufacturing)	Supervisory experience Experience setting up manufacturing processes and systems	First-line supervisor
Manager of production or operations (Green manufacturing)	Production planning and scheduling Flexibility in responding to customer requirements	Completion of BS probably required for this position
Training and development specialist (Green manufacturing or infrastructure)	Training experience	More formal course experience in HR or T&D