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This guide was designed specifically to help you prepare for your job and internship search. Use the pocket in the back to keep copies of the resumes and cover letters you submit to employers; this way you will have a record of whom you have contacted. Bring this portfolio with you when you meet with your Heinz ca

Welcome to Heinz Career Services

Office location: Suite A002 (on the garden level of Hamburg Hall)
Office email: cs77@andrew.cmu.edu
Office phone: 412-268-2166
Hours of operation: Monday through Friday, 8:30am – 5:00pm

After-hours appointments scheduled by request.

Meet the Staff

Ron Delfine, Director (rdelfine@andrew.cmu.edu)

Advisor for MPMs ISPMs and MSITs

Ron is responsible for providing a comprehensive range of services, programs, and materials focusing on career exploration, skill development and placement services to Heinz students. He is also responsible for expanding the base of organizations interested in offering employment opportunities to students graduating from Heinz. He previously worked as an executive recruiter for Crown Advisor Inc. based in Pittsburgh, and has also worked in the Carnegie Mellon Career Center as a Career Consultant for the College of Business Administration and the Mellon College of Science. Ron holds a Bachelor of Science in Secondary Education and a Master of Arts in Student Affairs in Higher Education, both from Indiana University of Pennsylvania.

Scott Scheible, Assistant Director (scotts2@andrew.cmu.edu)

Advisor for HCPMs and MSBTMs

Scott Scheible has been with Heinz College Career Services since 2011. Scott began his career working in the University of Pittsburgh Office of Career Services, where he administered the non-work study Student Employment program. In that role, Scott helped connect hiring departments across both Pitt and UPMC with qualified students who were seeking meaningful employment while pursuing their degrees. Scott also acquired considerable human resources and staffing experience outside of higher education, working for UPMC as a Corporate Staffing Consultant and for Bank of America as a Loan Servicing Team Manager. Scott holds a Bachelors degree in Employment Relations from SUNY Potsdam, a Masters Degree in Industrial Relations from Indiana University of Pennsylvania, and a Masters Degree in Urban Planning from the University at Buffalo.

Anita Lengvarsky, Associate Director (anitalen@andrew.cmu.edu)

Advisor for MSPPMs

Anita joined the Heinz College Career Services staff after serving as the Director of Programs for the Local Government Academy. At LGA she was responsible for program coordination, curriculum development, event planning, and the Municipal Intern Program. Anita has also worked as a Community and Economic Development Educator in a joint position with the Penn State Cooperation Extension and Smart Growth Partnership. She graduated from Shippensburg University with a degree in Geography, with concentrations in Regional Planning and Tourism. While at Shippensburg, Anita worked in the Career Education Department advising students on career options.

Christine Sundry, Career Advisor (cbgregor@andrew.cmu.edu)

Advisor for MISMs

Christine assists the students with the various aspects that encompass the internship and job search such as resume and cover letter writing, interview preparation and counseling in all areas of professional etiquette and development. Christine began her career as a Career Services Director for a technical, proprietary school and later transitioned to CMU, as the MISM Career Advisor from 2003-2005. Before returning to Heinz and MISM, Christine served as a Career Counselor and Internship Coordinator for Saint Vincent College (also her alma mater) and assists CMU's Engineering and Technology Innovation Management program in a similar capacity. She is happy to once again be serving the Heinz and the MISM population, bringing along her 13 years of experience in higher education.

Maureen May, Associate Director (mm@andrew.cmu.edu)

Advisor for MAMs and MEIMs

Maureen worked for the CMU main Career Center as the Assistant Director for Employer Relations before coming to Heinz, where she specialized in campus events, sponsorship opportunities, connection with key campus contacts and student organizations. Before that, she worked for the University of Pittsburgh in Career Counseling and Employer Relations as well. She obtained her Bachelor's degree from Saint Vincent College before attending Indiana University of Pennsylvania for her Masters in Student Affairs in Higher Education.

Jordan Bell, Assistant Director (jordanb@andrew.cmu.edu)

Advisor for MAMs and MS-DCs

Jordan is the main point of contact for MAM and MS-DC students. He leads skill building workshops, and coordinates programs and events like the Public Service Fair, Career Academy, and Networking Nights. He also oversees the Internship Opportunity Fund, which raises financial aid for students to complete their internships. Jordan joined Career Services in March of 2010. He received his undergraduate degree from Ohio University, majoring in Television Production, and in May of 2011 completed his Master of Education degree in Student Affairs Management from the University of Pittsburgh.

Lisa Everett, Recruitment & Office Coordinator (ls2y@andrew.cmu.edu)

Lisa is responsible for coordinating all career services recruitment activities and maintaining the office's daily operations. She comes to the Heinz College with significant experience in several offices at Carnegie Mellon University, most recently as Program Manager for the Undergraduate Research Office. In this role she developed and implemented programs, advised and counseled students and oversaw all administrative details for the program. She was also responsible for budget and financial planning, conducting monthly financial reviews and overseeing the annual Undergraduate Research Symposium with over 400 participants that recognizes student research achievements. Lisa holds a bachelor of Arts degree in Psychology from Chatham College.



Heinz Career Navigator

Heinz CareerNavigator is the online database for career-related events, on-campus interviews and info sessions, resume drops, and job postings. Below are a few key features it offers; more information about how to use CareerNavigator can be found on the Heinz website.

- ❖ **CREATE AN ACCOUNT**



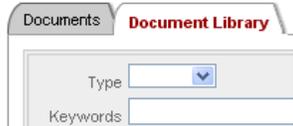
Go to <https://heinz-cmu-csm.symphlicity.com/students/> and register for a new account. Use your andrew email as your user name. You should receive a confirmation email within 72 hours. Use the same link to log in after you are approved.
- ❖ **UPLOAD YOUR RESUME**



Click on the "Documents" tab at the top of the screen. Click the "Add New" button to upload a new document to your personal account. Use this same process to upload cover letters, writing samples, etc., that can then be sent to employers.
- ❖ **SEARCH FOR JOBS/INTERNSHIPS**



Go to the "Jobs I Qualify For" link on the Home page under "Shortcuts" to go to the screen where you can enter keywords or Job ID#s to search for posted positions. Use the other links on the Home page to view upcoming events such as on-campus interviews, workshops, and employer info sessions.
- ❖ **SEARCH THE DOCUMENT LIBRARY**



Go to the "Documents" tab and then select the "Document Library" tab. Many documents and forms are stored here, such as links to think-tank organizations and the Heinz business card template.

PREPARING FOR YOUR JOB SEARCH

Values & Skills Assessments

Before you begin your job or internship search, it is important to identify what your strengths are and what you value in the workplace. One good way to do this is to conduct a personal value and skill assessment. This can be especially important if a) you don't have much prior work experience or b) you aren't sure what you are looking for in your next job move.

Know the answer to questions about such as:

1. Do like jobs that require logic rather than creativity?
2. Do you like jobs that involve travelling and outdoors rather than an indoor office?
3. What news topics usually catch your attention?
4. Are you comfortable being the center of attention?
5. Would you want to work in a large corporate business rather than in a small business or alone?
6. Would you prefer a high paying stressful job over a lower paying but less stressful job?
7. Would you like a job where you were held responsible for the overall success of a project?

You can download and complete the **Values Inventory** and **Skills Inventory** from the Heinz website at <http://www.heinz.cmu.edu/jobs-and-internships/searching-internships/index.aspx>

There are many other resources that can be used to get a sense of your own strengths. Examples of these are Myer-Briggs style personality tests, sites like [CareerPath.com](http://www.careerpath.com) that have a variety of quizzes and career advice materials, and publications like *What Color Is My Parachute?*, which is available from the Career Services library.

Once you can articulate to yourself what it is you are looking for in a job or career, then you will be ready to conduct a meaningful job search. Knowing this information will also help you explain to employers why you are interested in a position, or why you would be a good fit with their organization.

Doing Your Research

The first step to a successful job hunt is to do your research. Research the employer, the nature of the work, the career paths available, and what kinds of skills and qualifications are desired.

The following two sections of this guide will break down common types of jobs and employers for people in your degree program. Obviously this is not a comprehensive list, but it will give you an idea of what is reasonable to expect after Heinz.

Additional publications with employer and job information are available in the Career Services library, as well as in the Document Library in CareerNavigator. To learn more about a specific type of job or type of employer, see a career advisor and ask for a list of relevant alumni you can contact to ask specific questions.

MSBTM COMMON JOB ROLES

Marketing and Sales Managers

The following information is excerpted from the U.S. Department of Labor, Bureau of Labor Statistics' website. Additional information can be found here: <http://www.bls.gov/oco/ocos020.htm>

Nature of Work: Advertising, marketing, promotions, public relations, and sales managers coordinate their companies' market research, marketing strategy, sales, advertising, promotion, pricing, product development, and public relations activities. With the help of lower level managers, including *product development managers* and *market research managers*, marketing managers estimate the demand for products and services offered by the firm and its competitors and identify potential markets for the firm's products. In collaboration with sales, product development, and other managers, they monitor trends that indicate the need for new products and services and they oversee product development.

Sales managers direct the distribution of the product or service to the customer. They assign sales territories, set sales goals, and establish training programs for the organization's sales representatives. Sales managers advise the sales representatives on ways to improve their sales performance. In large multiproduct firms, they oversee regional and local sales managers and their staffs. Sales managers maintain contact with dealers and distributors, and analyze sales statistics gathered by their staffs to determine sales potential and inventory requirements and to monitor customers' preferences.

Substantial travel may be required in order to meet with customers and consult with others in the industry. Job transfers between headquarters and regional offices are common, particularly among sales managers. Long hours, including evenings and weekends are common. In 2008, over 80 percent of advertising, marketing, promotions, public relations, and sales managers worked 40 hours or more a week.

Qualifications: Because of the importance and high visibility of their jobs, advertising, marketing, promotions, public relations, and sales managers often are prime candidates for advancement to the highest ranks.

Persons interested should be mature, creative, highly motivated, resistant to stress, flexible, and decisive. The ability to communicate persuasively, both orally and in writing, with other managers, staff, and the public is vital. These managers also need tact, good judgment, and exceptional ability to establish and maintain effective personal relationships with supervisory and professional staff members and client firms.

Course subjects include brand and product management; international marketing; sales management evaluation; telemarketing and direct sales; interactive marketing; product promotion; marketing communication; market research; organizational communication; and data-processing systems, procedures, and management.

Employment Change: Most job openings for this occupation will be due to the need to replace workers who leave the occupation or retire. However, advertising, marketing, promotions, public relations, and sales manager jobs are highly coveted and are often sought by other managers or highly experienced professionals, resulting in keen competition. Job growth will be spurred by competition for a growing number of goods and services, both foreign and domestic, and the need to make one's product or service stand out in the crowd.

Earnings: Wages vary substantially, depending upon the employee's level of managerial responsibility, length of service, and education; the size and location of the firm; and the industry in which the firm operates. For example, manufacturing firms usually pay these managers higher salaries than nonmanufacturing firms. For sales managers, the size of their sales territory is another important determinant of salary. Many managers earn bonuses equal to 10 percent or more of their salaries. Median annual wages for sales managers in May 2010 were \$98,530 and median averages for marketing managers were \$108,260.

Production Managers

The following information is excerpted from the U.S. Department of Labor, Bureau of Labor Statistics' website. Additional information can be found here: <http://www.bls.gov/oco/ocos016.htm>

Nature of Work: *Industrial production managers* plan, direct, and coordinate the production activities required to produce the vast array of goods manufactured every year in the United States. They make sure that production meets output and quality goals while remaining within budget. Depending on the size of the manufacturing plant, industrial production managers may oversee the entire plant or just one area of it.

Industrial production managers devise methods to use the plant's personnel and capital resources to best meet production goals. They monitor the production run to make sure that it stays on schedule, and they correct any problems that may arise. Part of an industrial production manager's job is to come up with ways to make the production process more efficient. Industrial production managers also monitor product standards and implement quality control programs. They make sure that the finished product meets a certain level of quality, and if it doesn't, they try to find out what the problem is and solve it.

Industrial production managers work closely with other managers of the firm to implement the company's policies and goals. They also must work with the firm's financial departments in order to come up with a budget and spending plan. They work the closest with the heads of the sales, procurement, and logistics departments.

Qualifications: Many industrial production managers have a college degree in business administration, management, industrial technology, or industrial engineering. As production operations become more sophisticated, an increasing number of employers are looking for candidates with graduate degrees in industrial management or business administration, particularly for positions at larger plants where managers have more oversight responsibilities. Today, companies are placing greater importance on a candidate's interpersonal skills. Because the job requires the ability to compromise, persuade, and negotiate, successful production managers must be well rounded and have excellent communication skills. Strong computer skills also are essential.

Location/Industries: Industrial production managers with a proven record of superior performance may advance to plant manager or vice president of manufacturing. Others transfer to jobs with more responsibilities at larger firms. Opportunities also exist for managers to become consultants. Overall manufacturing employment is expected to decline as the production process becomes more automated. However, because industrial production managers coordinate the use of both workers and machines in the production process, they will not be as affected as other occupations by automation. Nevertheless, the employment decline will result from improved productivity and increased imports of manufactured goods.

Efforts to increase efficiency at the management level have led companies to ask production managers to assume more responsibilities, particularly as computers and production management software allow managers to coordinate scheduling, planning, and communication more easily among departments.. However, most of the decision-making work of production managers cannot be automated, a factor that will limit the decline in their employment.

Employment Change: Despite the projected employment decline, a number of jobs are expected to open because of the need to replace workers who retire or transfer to other occupations. Applicants with experience in production occupations, along with a college degree in industrial engineering, management, or business administration will enjoy the best job prospects. Employers also are likely to seek candidates who have excellent communication skills and related work experience and who are personable, flexible, and eager to enhance their knowledge and skills through ongoing training.

Earnings: Median annual wages for industrial production managers were \$87,160 in May 2010.

Regulatory Affairs Specialist

A regulatory affairs specialist makes sure his company strictly follows government rules and regulations relevant to company goals and operations. He can work in, pharmaceuticals, energy or medical devices industries. His role often involves extensive interaction with regional and national regulatory agencies, mainly the FDA. The specialist is expected to keep his company up-to-date on regulatory policy and procedural changes that could affect them, either positively or negatively. He is also required to provide feedback on pertinent issues and defend his company's interests and positions.

If his company proposes to introduce new products or services, or plans activities outside the norm, the regulatory affairs specialist presents a proposal of action to the agencies. He ensures the plan complies with corporate guidelines for submission and meets government standards. Interaction with lower-level approval teams is generally required prior to making his presentation for final approval.

This position requires assertive and polished communication skills. The specialist provides input on teams that determine regulatory requirements that affect his company's, as well as his country's, market position. His participation and the clout he brings to the negotiations affect the international market's present and future direction. Well-written and thoroughly researched reports, along with thought provoking oral presentations are required to be a successful regulatory affairs specialist.

Since so many issues and regulations that affect international trade and political repercussions are at hand, a regulatory affairs specialist must be extremely well-read on international affairs. He should be well informed on trade, commerce and industry trends, as well as public perception and attitudes. Acute analytical skills and sharp policy interpretation abilities are highly desirable traits for this position.

Ensuring all documentation is complete and filed in a timely manner is an important part of a regulatory affairs specialist's job. An important part of his work is to procure and file licenses and legal documents regarding the sales and transport of his company's products. Involvement in this process also provides him with the opportunity to spot questionable directives and statutes and efficiently address points of concern.

In addition to keeping informed of licensing and legal documentation requirements, a regulatory affairs specialist is involved in less-visible yet vastly important industry issues, such as packaging and labeling. He needs to discuss these finer points with his colleagues and associates to determine their positions. Once a consensus is reached, they can address contentious issues with a united front and present a strong solidarity in presentations and debates. Regulatory affairs specialists develop strategies among themselves that often involve mutually conciliatory positions and stances

Information taken from: www.wisegeek.com and www.salarylist.com

Earnings: - Regulatory Affairs Specialist average salary is \$62,849, median salary is \$64,950 with a salary range from \$30,000 to \$100,000.

Health Care and Life Science Consultant

Nature of Work: Management analysts, often referred to as *management consultants* in private industry, analyze and propose ways to improve an organization's structure, efficiency, or profits. The work of management analysts and consultants varies with each client or employer and from project to project. In all cases, analysts and consultants collect, review, and analyze information in order to make recommendations to managers.

After obtaining an assignment or contract, management analysts first define the nature and extent of the problem that they have been asked to solve. During this phase, they analyze relevant data—which may include annual revenues, employment, or expenditures—and interview managers and employees while observing their operations. The analysts or consultants then develop solutions to the problem. Some management consultants offer advice on matters pertaining directly to the industry in question. For instance, management consultants for the healthcare industry may advise on compliance with biohazard removal and patient confidentiality regulations, avoidance of malpractice suits, and methods of dealing with managed care and health insurance companies. Industries such as legal services, telecommunication, and utilities also have consulting firms that specialize in industry-specific issues.

Once they have decided on a course of action, consultants report their findings and recommendations to the client. Their suggestions usually are submitted in writing, but oral presentations regarding findings are also common. For some projects, management analysts are retained to help implement their suggestions.

Qualifications: Common fields of study include business, management, accounting, marketing, economics, statistics, computer and information science, or engineering. Most analysts also have years of experience in management, human resources, information technology, or other specialties.

Management analysts often work with minimal supervision, so they need to be self-motivated and disciplined. Analytical skills, the ability to get along with a wide range of people, strong oral and written communication skills, good judgment, time-management skills, and creativity are other desirable qualities. The ability to work in teams also is an important attribute as consulting teams become more common.

Locations/Industries: Because they must spend a significant portion of their time with clients, analysts travel frequently. Management analysts are found throughout the country, but employment is concentrated in large metropolitan areas.

Employment Change: Keen competition is expected for these jobs; opportunities should be best for those with a graduate degree, specialized expertise, and a talent for salesmanship and public relations.

Earnings: Generally, management analysts employed in large firms or in metropolitan areas have the highest salaries. Median annual wages of wage and salary management analysts in May 2008 were \$73,570. The middle 50 percent earned between \$54,890 and \$99,700.

The above information is excerpted from the U.S. Department of Labor, Bureau of Labor Statistics: <http://www.bls.gov/oco/ocos019.htm>

MSBTM COMMON EMPLOYERS

OVERVIEW: Meaningful work is one of the most commonly cited benefits of working in biotechnology. The products workers create improve the health and nutrition of the world's population. Interesting work is another plus: biotechnology workers regularly learn new techniques and make discoveries. But that's not all, because there is also a lot of money to be made in this enormous and growing piece of the healthcare market. The biotech industry is projected to grow faster than most other industries in this decade. However, biotech projects are often subject to fluctuations in funding, and the work can be frustrating: even after the laboratory work is complete, many of the products biotechnology workers develop never make it to the public. Regulations and financial considerations mean that some discoveries are shelved. At Heinz, MSBTM program graduates typically work for either pharmaceutical, medical device, diagnostic, and biotechnology companies, which are discussed further below.

The info above comes from U.S. Department of Labor, Bureau of Labor Statistics, <http://www.bls.gov/opub/ooq/2002/fall/art03.pdf> and from <http://www.bls.gov/oes/2007/may/figure46.pdf>

Pharmaceutical

OVERVIEW: The pharmaceutical and medicine manufacturing industry develops and produces a variety of medicinal and other health-related products that save the lives of millions of people from various diseases and permits many people suffering from illness to recover to lead productive lives. After a drug successfully passes animal and clinical tests, the U.S. FDA's Center for Drug Evaluation and Research (CDER) must review the drug's performance on human patients before approving the substance for commercial use. The entire process, from the first discovery of a promising new compound to FDA approval, can take over a decade and cost hundreds of millions of dollars. Each year, pharmaceutical industry testing involves millions of compounds, yet may eventually yield fewer than 100 new prescription medicines.

There are three main types of pharmaceutical companies. Large, or mainline, pharmaceutical companies are established firms that have many approved drugs already on the market. These companies often have significant numbers of R&D laboratories and manufacturing plants throughout the Nation and around the world. In contrast, smaller pharmaceutical companies are usually newer firms that often do not have any approved drugs on the market. As a result, these firms almost exclusively perform R&D. In addition to developing their own drugs, some small pharmaceutical companies perform contract research for other pharmaceutical companies. Finally, generic pharmaceutical companies manufacture drugs that are no longer protected by patents. Because their products are all established drugs, they devote fewer resources to R&D and more to manufacturing.

The pharmaceutical and medicine manufacturing industry consists of over 2,500 places of employment, located throughout the country. R&D laboratories perform the work of drug discovery and development, while manufacturing plants produce the final drugs for consumers. Most R&D laboratories are located separately from manufacturing plants, but some labs and production plants are integrated.

After FDA approval, problems of production methods and costs must be worked out before manufacturing begins. If the original laboratory process of preparing and compounding the ingredients is complex and too expensive, pharmacists, chemists, chemical engineers, packaging engineers, and production specialists are assigned to develop a manufacturing process economically adaptable to mass production. After the drug is marketed, new production methods may be developed to incorporate new technology or to transfer the manufacturing operation to a new production site.

Advances in manufacturing processes are affecting the industry. While pharmaceutical manufacturers have long devoted resources to new drug development as a source for future profits, firms are increasingly realizing that improvements throughout the drug pipeline are needed to stay competitive. Along with other manufacturing industries, pharmaceutical manufacturers are realizing that quality products can best be produced when quality improvements occur at all stages and when processes are continually updated with the latest technologies and methods. Controlling the product flow through the supply chain also ensures that valuable resources do not sit idle but are put to work, and that final products reach consumers without delay.

The info above is excerpted from U.S. Department of Labor, Bureau of Labor Statistics, <http://www.bls.gov/oco/cg/cqs009.htm>

EXAMPLE OF EMPLOYERS

GlaxoSmithKline, Novartis, Bayer, Johnson & Johnson, Pfizer, Merck, Abbott Laboratories, Bristol-Myers Squibb, Astra Zeneca, Eli Lilly and Company

JOB SEARCH STRATEGIES: Keep up with industry information from Pharmaceutical Research and Manufacturers of America (PhRMA) www.phrma.org and at www.biospace.com. There are also several industry-specific job listings, such as, www.hirerx.com, www.medzilla.com, and www.biojobnet.com. www.biotechnologymeetings.com provides a comprehensive schedule of biotechnology events, summits, seminars and meetings worldwide.

Medical Device & Diagnostic Equipment Manufacturers

OVERVIEW: Medical device companies are at the intersection of technology and healthcare, and are often the ones doing the application of ground-breaking research in bioinformatics, nanotechnology, genetics, biologics, robotics, etc.

Many medical device manufacturers are often part of a larger medical services research and production organization. For example, one firm BD (Becton, Dickinson and Company) is a global medical technology company that manufactures and sells medical supplies, devices, laboratory instruments, antibodies, reagents and diagnostic products through its three segments: BD Medical, BD Diagnostics and BD Biosciences. It serves healthcare institutions, life science researchers, clinical laboratories, the pharmaceutical industry and the general public.

Another company, Medtronic Inc., has six major businesses focus their efforts around a condition or therapy type: Cardiac Rhythm Disease Management, Spinal and Biologics, CardioVascular, Neuromodulation, Diabetes, and Surgical Technologies. To ensure they leverage knowledge and best practices across all these diverse groups, they have several strategic corporate groups.

The healthcare and medical fields are projected to grow by 25% between 2000 and 2010 alone. However, recent changes in regulations can affect this job market. Massachusetts medical-device companies say they'll probably cut jobs, increase prices and take other measures in order to pay for the federal health-care reform's new 2.3% sales tax on their products, according to a survey.

The information above comes from "Medical-device companies warn of job cuts, price increases," by Jay Fitzgerald, The Boston Herald, May 4th, 2010; www.bd.com; and www.medtronic.com/about-medtronic/index.htm

EXAMPLE EMPLOYERS:

Medtronic, Integra, Edward Lifesciences, Becton, Dickinson and Co, Stryker, Johnson and Johnson, Zoll

JOB SEARCH STRATEGIES: You should be active on LinkedIn: it's a tremendous resource for medical device industry stats. Keep up with industry information resources such as Medical Device Manufacturers Association www.medicaldevices.org, BioWorld Conferences www.bioworld.com, Biotechnology Industry Organization www.bio.org, and the www.qmed.com newsletter.

There are also job sites specifically for this sector, such as www.medicaldevicecareers.com and www.meddevicejobs.com. Also, attend industry conferences to network like CED's Biotech Conference in North Carolina or the BIO International Convention -- www.biotechnologymeetings.com provides a comprehensive schedule of biotechnology events, summits, seminars and meetings worldwide.

Diagnostics

OVERVIEW: IV Diagnostics was formed to develop, test, and market more effective diagnostic tools for addressing rare circulating tumor cells. Cancer cells spread through the circulatory system as “circulating tumor cells” (CTCs) and represent unique diagnostic targets. CTCs are released from primary tumors into blood circulation and then lodge at distant organs to initiate new cancer growth. Thus, circulating tumor cells constitute the major cause for mortality among cancer patients. Recent advancements in detection and characterization of CTCs can have a significant impact on early cancer detection. For instance, the quantitation of CTCs can be used for prognosis of the outcomes of metastatic diseases. In another example, identification of cancer stem cells, a subpopulation of CTCs believed to be tumorigenic, can be used for identifying metastasis and relapse.

The US In-vitro Diagnostic (IVD) Tests Market

The in vitro diagnostic (IVD) tests market, in particular, is being seen a highly promising. The national demand for in vitro diagnostic (IVD) products is expected to grow at an annual rate of 5.4 percent to reach \$23 billion by 2013.

The star performers of the IVD industry segment are likely to be the clinical chemistry and immuno-assay systems. While clinical chemistry products will benefit from the sales of personal blood glucose monitoring systems and testing-strips, the growth of immunoassay will be driven by an increased use of value-added chemiluminescent systems into the pharmaceutical drug and infectious disease testing. With the rising volumes of blood glucose monitoring among diabetic patients, endocrine condition testing is expected to be one of the most popular IVD application till 2013 and later.

The IVD products including clinical chemistry reagents and medical instruments, will be in high demand and present ample growth opportunities because of epidemiological trends such as the estimated diabetes burden in the US. The total diabetes burden is forecast to be 11.5% (25.4 million) in 2011, 13.5% (32.6 million) in 2021, and 14.5% (37.7 million) in 2031. The demand will increase on account of the sale of both self-monitoring systems as well as diabetes testing becoming essential to general health screening routines.

During the past couple of years the in-vitro diagnostics market has grown at an annual rate of about 6 percent, and was valued at \$36.5 billion in 2007, compared to just \$28.7 billion in 2004. By the year, assuming a similar rate of growth, it will reach a figure of \$50.0 billion in value. And despite the 2009 financial crisis, the IVD segment is expected to witness growth. Presently the global IVD market is quite consolidated with the top ten market players owning about 80 percent market share. Roche is the largest market share holder with 20 percent, followed by Siemens and Abbott holding 12 percent share each. The global growth drivers for the IVD industry are advancements in molecular diagnostics, health care for diabetes, and emerging markets.

Information taken from: [TheMedica.com](http://www.themedica.com). A comprehensive health and medical industry B2B marketplace.

EXAMPLE EMPLOYERS

Roche Diagnostics, Siemens Healthcare DX, Abbott , J&J, Beckman Coulter, Bayer Diabetes, bioMerieux,

JOB SEARCH STRATEGIES: You should be active on LinkedIn: <http://www.diagnosticsjobs.com/>, Biotechnology Industry Organization www.bio.org, and the www.qmed.com newsletter.

-- www.biotechnologymeetings.com provides a comprehensive schedule of biotechnology events, summits, seminars and meetings worldwide.

Biotechnology

Overview: Biotechnology has applications in four major industrial areas, including health care (medical), crop production and agriculture, non food (industrial) uses of crops and other products (e.g. biodegradable plastics, vegetable oil, biofuels), and environmental uses.

A series of derived terms have been coined to identify several branches of biotechnology; for example:

Bioinformatics is an interdisciplinary field which addresses biological problems using computational techniques, and makes the rapid organization and analysis of biological data possible. The field may also be referred to as *computational biology*, and can be defined as, "conceptualizing biology in terms of molecules and then applying informatics techniques to understand and organize the information associated with these molecules, on a large scale." Bioinformatics plays a key role in various areas, such as functional genomics, structural genomics, and proteomics, and forms a key component in the biotechnology and pharmaceutical sector.

Blue biotechnology is a term that has been used to describe the marine and aquatic applications of biotechnology, but its use is relatively rare.

Green biotechnology is biotechnology applied to agricultural processes. An example would be the selection and domestication of plants via micro propagation. Another example is the designing of transgenic plants to grow under specific environments in the presence (or absence) of chemicals. One hope is that green biotechnology might produce more environmentally friendly solutions than traditional industrial agriculture. An example of this is the engineering of a plant to express a pesticide, thereby ending the need of external application of pesticides. An example of this would be Bt corn. Whether or not green biotechnology products such as this are ultimately more environmentally friendly is a topic of considerable debate.

Red biotechnology is applied to medical processes. Some examples are the designing of organisms to produce antibiotics, and the engineering of genetic cures through genetic manipulation.

White biotechnology, also known as industrial biotechnology, is biotechnology applied to industrial processes. An example is the designing of an organism to produce a useful chemical. Another example is the using of enzymes as industrial catalysts to either produce valuable chemicals or destroy hazardous/polluting chemicals. White biotechnology tends to consume less in resources than traditional processes used to produce industrial goods. The investment and economic output of all of these types of applied biotechnologies is termed as **bioeconomy**.

Global Trends: According to Burrill and Company, an industry investment bank, over \$350 billion has been invested in biotech since the emergence of the industry, and global revenues rose from \$23 billion in 2000 to more than \$50 billion in 2005. The greatest growth has been in Latin America but all regions of the world have shown strong growth trends. By 2007 and into 2008, though, a downturn in the fortunes of biotech emerged, at least in the United Kingdom, as the result of declining investment in the face of failure of biotech pipelines to deliver and a consequent downturn in return on investment.

Information taken from: http://en.wikipedia.org/wiki/History_of_Biotechnology

EXAMPLE EMPLOYERS

Amgen, Genentech, Genzyme, Gilead, Biogen Idec, MedImmune, Celgene, Millennium Pharmaceuticals

MANAGEMENT CONSULTING FIRMS

OVERVIEW: The consulting industry can be classified according to several dimensions. One of them, and maybe the most relevant for public policy students, is the division of the private and public sector practices. Some large firms offer services in both practices, but the small ones tend to focus in on one or the other. In the same vein, there are some firms that are able to cover several industries or sub-sectors. Those that specialize in a narrower niche might be termed “boutique” firms.

Another dimension has to do with the functional practice, which can range from strategy to implementation. The typical firms that represent the strategy practice are McKinsey & Co., Bain and Boston Consulting Group. A representative firm for an implementation-style engagement is Accenture or IBM. Deloitte distinguishes itself by being able to offer a full array of services (from all-strategy projects to only-implementation ones). By in large, the strategy firms are far more selective, much smaller and charge much higher fees than the implementation practices which tend to send teams to the client for longer-term engagements.

In many of the consulting firms, especially in the big ones, the “up-or-out” policy requires consultants to leave the firm if not promoted within a certain period. Teamwork, multi-task, superior organizational skills and a good sense of prioritization, public speaking, quantitative skills, and out-of-the-box thinking are essential to demonstrate to potential employers. Further, you must have willingness for long hours and frequent travel as is common to this industry.

Many consulting firms will work for life science organizations as well, improving business process or operations. Starting at a large consulting firm and then selecting projects that are related to the life science industry will help you transition to life science specific consulting firms or industry later on.

EXAMPLE OF EMPLOYERS

Deloitte Consulting LLP, PriceWaterhouseCoopers, Ernsy&Young Global Life Science Center, Boston Consulting Group, Campbell Alliance, Navigant Consulting, PA Consulting, Clarkston Consulting

JOB SEARCH STRATEGIES:

Consulting is notorious for the Case style interviews. Many companies and universities will hold Case competitions throughout the year. Initiate participation in the competitions by pulling together a team.

Join Consulting Clubs on campus and become an active member. Connect with the many BTM alumni that are currently in a life science consulting position.

Internships

A full-time internship will provide you with the opportunity to apply the management and technical skills learned during the first year of the program, gain further professional experience and develop a strong context for the second-year concentration coursework.

As an MSBTM student, you'll have to complete an internship in the summer between your first and second years to gain first-hand, real-world experience. Students may conduct internships in many different organizations, including government agencies, international community development organizations, think tanks, consulting firms, and non-profit organizations. You will not receive academic credit for your internship, but it will be reflected on your transcript as a course with a Pass/Fail grade.

NOTE: You are personally responsible for securing a suitable internship. Career Services will assist you in your search through counseling, workshops, and internship opportunity listings in CareerNavigator. We strongly suggest you **begin your internship search beginning in the fall of your first year**. Some internship opportunities have application deadlines in the fall, so by starting your search early, you won't miss out on these internships.

Internship Requirements

- Complete the [Internship Reporting Form](#) online at the Career Services website.
- The internship should be for a minimum of ten weeks full-time (400 hours).
- The internship should allow you to apply skills you have acquired in your first year of study.
- We will send an internship evaluation which is expected to be reviewed by either your supervisor or career advisor.

Students should view the [Student Internship Guidelines](#) for more information, and provide the employers with the [Guidelines for Internship Supervisors](#) so they're fully aware of their roles and responsibilities.

For International F1 Visa Students: You must apply for [Curricular Practical Training \(CPT\)](#) employment authorization for your summer internship. CPT authorization is required regardless of the internship being paid or unpaid. If your degree program requires you to do a summer internship, you can qualify for CPT. Processing CPT may take up to 1 week and you cannot begin employment until you receive authorization. CPT guidelines, forms and instructions can be found at the [CMU Office of International Education's website](#).

Heinz College Internship Funding

The Internship Opportunity Fund (IOF)

Students who accept internships that do not qualify for funding under the Federal Work Study (FWS) program, either because the student does not have federal financial aid eligibility or because the employer and/or the job does not meet federal regulations for FWS eligibility, may apply to the Heinz College Internship Opportunity Fund (IOF) for consideration of awards to help support non-paying and low paying internships. Students are never eligible to receive both IOF and FWS funds to subsidize the same position.

The IOF is a student-run group that holds various fundraising activities throughout the year to raise money that will be matched by the College if the predetermined fundraising goal is met. All funds are then redistributed to students taking low-paying or unpaid summer internships. Students that actively participate in the fundraising, and that have a demonstrated financial need, will receive preference when the funds are distributed. The IOF is open to students in all programs who do not qualify for FWS and that have a required summer internship component, regardless of the employer's sector.

Applications are accepted in April of each year. Contact Jordan Bell for more information.

The Milton and Cynthia Friedman Internships in Washington, D.C.

Available for all students, these grants aim to encourage and support the participation of undergraduate and graduate students in policy-related internships located in the nation's capital. Students are responsible for finding their own internships a public or private sector in Washington, D.C. Grants of up to \$3,000 are available. Six to ten grants will be awarded for the summer. Internships usually cover a 10-week period. Friedman Interns are expected to attend informal seminars on policy topics and organized events around DC.

Federal Community Service

The Heinz College participates in the Federal Community Service (FCS) work study program during the academic year and summer work periods. For more information, visit www.heinz.cmu.edu/careers/fcs.html

MSBTM Internship Timeline

We strongly encourage you to begin your research and prepare for your internship search in the fall of your first year. By starting your search early, you won't miss out on potential opportunities. Most students do not get their internships through on-campus recruiting, so your interviews are generally off-campus.

Career Services will assist you with your internship search, but please remember we do not match students with employers; obtaining an internship is your responsibility. We encourage you to take the following steps to ensure a successful internship outcome.

SEPTEMBER

- Log in to access to CareerNavigator to upload your resume and view internship listings.

OCTOBER

- Meet with your career advisor to discuss your interests and to organize your internship search.
- Review the internships of previous students. We also encourage you to speak informally with second year students who can offer first-hand information about their internships.

NOVEMBER/DECEMBER

- Begin researching organizations and internship opportunities. Pay close attention to organizations that have established internship programs and their deadlines.
- Attend the workshops to perfect your resume, hone your interviewing skills, and gain knowledge about the internship search process.
- Attend relevant information sessions.
- Participate in mock interviews.
- Get your resume cleaned up and reviewed by your career advisor.
- Start checking TartanTRAK and Career Navigator on a regular basis for opportunities.

JANUARY/FEBRUARY

- At this point you should have your top-ten list of organizations at which you would like to intern. This list can include organizations that have established internship programs as well as those that interest you without formal internship programs.
- Update your resume with relevant academic projects, coursework, etc.
- Being utilizing your personal network for internship leads as well as checking organization's websites for internships.
- Attend Network Nights.
- Network. Talk to alumni about internship opportunities in their organization. They're an excellent resource for learning more about a particular organization, career field or employment opportunity. You can find alumni in the Alumni Directory, Alumni Career Advisor Network, and Carnegie Mellon Alumni LinkedIn Network.
- Continue checking TartanTRAK and Career Navigator on a regular basis for opportunities.

MARCH

- Make contact with employers, sending resumes and applications, and initiating internship interviews in person or by phone.
- Attend relevant Network Nights and Career Fairs by Heinz, Tepper, and CMU.
- Prepare a back-up plan if your first choice internships don't work out.
- Research funding options available if your internship is low paying (less than \$10/hr.) or unpaid.
- Continue checking TartanTRAK and Career Navigator on a regular basis for opportunities.

APRIL

- At this point you should have secured an internship or be interviewing with various organizations.
- Complete the Internship Reporting Form online.
- Turn in any internship funding applications.
- Connect with other interns relocating to your new city to share housing
- **If you an F-1 Visa student, you must apply for CPT.**

AUGUST

- Look for Heinz, Tepper, and Carnegie Mellon events your city and attend to network with other interns.
- Be sure to schedule an exit interview with your supervisor so that they can give you feedback about your performance and have your supervisor complete the Internship Evaluation form for the School of Policy and Management and return it to the Career Center.

Heinz Job Search Assistance Fund

The Heinz College will provide each Master's student with up to \$300 in assistance for reasonable costs of travel associated with job interviews and/or conference attendance with public sector or non-profit organizations.

This fund is to assist you with your job search; expenses will not be reimbursed if you have accepted a job offer and receipts must be submitted within 21 days of the interview. In order to qualify, you must first inquire with the interviewing organization whether they have funds available to assist you with interview-related travel expenses and document their response.

Please view the guidelines and application [on the website](#) or in the CareerNavigator Document Library for details and instructions

Tips for Writing Resumes

Get the interview

A resume is a tool which highlights your past experience to demonstrate your ability to perform a job. A resume's function is not to get you the job, it is to get you the interview. It does this by *structuring* the reader's thinking, *communicating your strengths* and abilities, and *grabbing the attention* and motivating the reader to take action.

Make it easy to read

A prospective employer will scan your resume for no longer than 30 seconds on average. In order for this to work in your favor, your resume must deliver job-relevant information quickly by being easy to skim and extract interesting information.

Make it relevant to the employer

To gain a competitive edge in the job market, your resume must be **well written, error-free**, and as **quantitative and objective** as possible in order to convey a clear and concise image of yourself.

Many of the skills and characteristics listed below relate to how employees work, indicating the importance employers place on work style. Your ability to demonstrate to an employer that you have these qualities and skills is just as important as actually possessing them. When you can, point to specific activities or course work that demonstrate these qualities:

- Communication skills, verbal and written
- Teamwork skills
- Interpersonal skills/works well with others
- Motivation/initiative
- Strong work ethic
- Analytical skills
- Flexibility/adaptability
- Computer/technical skills
- Organizational skills
- Leadership

Source: Job Outlook 2006, National Association of Colleges and Employers

DO:

- ✓ Make sure everything on your resume supports your job objective.
- ✓ Focus on the employer's needs for the position.
- ✓ Emphasize what you got done, do not simply list your job duties.
- ✓ Show results, and quantify. Use numbers, percentages, frequency, volume, etc.
- ✓ Be relevant – mention the specific skills you have to do the job.
- ✓ Use action verbs to describe your work. (*See the list that follows*).
- ✓ Limit length to one page. After you have a couple of years of experience, then go to two.
- ✓ Be visually appealing and easy to read.
- ✓ Use consistent formatting.

DO NOT:

- × Lie on your resume. The truth will be found out and many employers will terminate an employee if false information was provided during the hiring process.
- × Have any misspellings, bad grammar, or poor punctuation.
- × Use lengthy phrases, sentences or paragraphs.
- × Include your birth date, marital status, religious affiliation, and personal philosophies.
- × Include salary information; save it for the interview. If you are required to give that information, reveal it in the cover letter.
- × Include a photograph of yourself.
- × List exact dates (months and years are sufficient).
- × List your high school information.
- × List references on the resume – those will be asked for later if needed.
- × Use pronouns, abbreviations, conjunctions, jargon or buzzwords unless terms are widely known and accepted (as in the case of AFL-CIO or UNICEF).
- × Be too repetitive with your action words.
- × Have someone else write your resume. You can ask for advice, but you know yourself best and will have to defend the contents in the interview.

415 Action Words for Describing Your Experience

Achieved	Centralized	Disapproved	Found	Invited
Acquired	Challenged	Discarded	Framed	Invoked
Acted	Changed	Discovered	Fulfilled	Involved
Activated	Checked	Displayed	Gained	Isolated
Adapted	Chose	Disseminated	Gathered	Issued
Added	Claimed	Distributed	Gave	Joined
Addressed	Clarified	Divided	Generated	Judged
Adjusted	Closed	Documented	Governed	Jumped
Administered	Collaborated	Donated	Granted	Justified
Advanced	Collated	Doubled	Gratified	Key
Advised	Collected	Drafted	Grew	Laid
Advocated	Combined	Drove	Grouped	Launched
Affected	Commenced	Earned	Guarded	Led
Affirmed	Commended	Eased	Guided	Left
Agreed	Communicated	Edited	Halted	Lessened
Alleviated	Compared	Effected	Handled	Leveled
Allocated	Compiled	Elected	Harmonized	Lightened
Allotted	Completed	Eliminated	Hastened	Limited
Altered	Composed	Employed	Headed	Linked
Amended	Conceived	Encouraged	Healed	Liquidated
Analyzed	Concluded	Ended	Heightened	Localized
Announced	Condensed	Endorsed	Held	Located
Anticipated	Conducted	Enforced	Helped	Locked
Appointed	Conferred	Engineered	Hired	Maintained
Apportioned	Confirmed	Enhanced	Identified	Managed
Appraised	Considered	Enlarged	Ignored	Mapped
Approved	Constructed	Erected	Ignited	Marketed
Arranged	Contacted	Established	Imparted	Matched
Assembled	Contracted	Estimated	Impelled	Measured
Assessed	Contributed	Evaluated	Implemented	Merged
Assisted	Converted	Examined	Imposed	Met
Assumed	Conveyed	Exceeded	Improved	Mitigated
Assured	Coordinated	Excelled	Improvised	Mobilized
Audited	Corrected	Executed	Inaugurated	Moderated
Augmented	Corresponded	Exercised	Increased	Modernized
Authorized	Counseled	Exhibited	Indicated	Modified
Averted	Created	Expanded	Influenced	Monitored
Avoided	Cultivated	Expected	Informed	Motivated
Awarded	Dealt	Expedited	Initiated	Mounted
Backed	Decentralized	Expelled	Innovated	Named
Based	Decided	Explained	Inquired	Narrated
Bought	Decreased	Exposed	Insisted	Negotiated
Broadened	Defined	Extended	Inspected	Nominated
Brought	Demanded	Extracted	Inspired	Nullified
Budgeted	Demonstrated	Faced	Installed	Observed
Built	Designed	Facilitated	Instigated	Obtained
Calculated	Described	Fashioned	Instituted	Offered
Called	Destroyed	Finished	Instructed	Opened
Calmed	Detected	Firmed	Insured	Operated
Campaigned	Determined	Foresaw	Interpreted	Opposed
Canceled	Developed	Formed	Interviewed	Organized
Captured	Devised	Formulated	Introduced	Originated
Caught	Diminished	Fortified	Invented	Overcame
Caused	Directed	Fought	Investigated	Oversaw

Passed	Published	Replied	Serviced	Suggested
Patched	Publicized	Reported	Set Up	Supervised
Paid	Purchased	Represented	Settled	Supplied
Perceived	Pursued	Researched	Shaped	Supported
Perfected	Quelled	Rescued	Shaved	Surpassed
Performed	Questioned	Reshaped	Sifted	Surveyed
Permitted	Quickened	Resolved	Simplified	Sustained
Persuaded	Quieted	Responded	Slowed	Swept
Pledged	Raided	Restrained	Sold	Systematized
Pleased	Rallied	Restricted	Solved	Talked
Polished	Reacted	Retarded	Sought	Taught
Possessed	Received	Revealed	Sparked	Tested
Predicted	Recommended	Reviewed	Specified	Tracked
Prepared	Recorded	Revised	Spelled	Traded
Presented	Recruited	Revitalized	Split	Trained
Presided	Rectified	Risked	Spoke	Transferred
Pressed	Redesigned	Routed	Spurred	Tripled
Probed	Reduced	Sanctioned	Staffed	Uncovered
Processed	Referred	Saved	Stalled	Undertook
Procured	Reformed	Scanned	Standardized	Unearthed
Produced	Regulated	Scheduled	Stated	Unraveled
Programmed	Rejected	Screened	Stimulated	Upgraded
Projected	Related	Scrutinized	Stood	Upheld
Promoted	Relieved	Searched	Stopped	Urged
Prompted	Remedied	Secured	Streamlined	Used
Proposed	Renegotiated	Selected	Strengthened	Utilized
Proved	Reorganized	Settled	Struggled	Warned
Provided	Repaired	Separated	Studied	Won
Pruned	Replaced	Served	Submitted	Wrote

JANE PHARMA

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EDUCATION

CARNEGIE MELLON UNIVERSITY

Pittsburgh, PA

Master of Science in Biotechnology and Management - **MSBTM**

5/10

An interdisciplinary program integrating graduate coursework from the Tepper School of Business, the John Heinz III, School of Public Policy and Management, and the Mellon College of Science

- Tepper School of Business Biopharma Club
- Tepper School of Business Entrepreneur and Venture Capital Club

COLLEGE OF CHARLOTTE

Charlotte, NC

Bachelor of Science in Marine Biology

5/06

- Distinguished Honors, Fall 2005

COURSEWORK/SKILLS

- **Business:** Marketing Management, Marketing Leveraging Technology, Production & Operations, Finance, Financial Accounting, Professional Speaking, Strategic Writing, Managerial Economics, Optimization and Decision Making, Entrepreneurial Thought & Action, Investment Management
- **Regulatory/Policy:** Biotechnology Industry Structure & Strategy, Regulation & Compliance, Manufacturing Lab Practices, Health Systems & Health Policy, Risk Analysis
- **Science:** Applied Molecular & Cell Biology, Principles of Biotechnology, Cellular Neuroscience, Medical Devices, CellBiology, Organic Chemistry, Healthcare GIS, Introduction to Database Management
- **Research Tools Used Include:** Venture Source, VentureXpert, Hoovers, and Frost & Sullivan

EXPERIENCE

PITTSBURGH LIFE SCIENCES GREENHOUSE (PLSG)

Pittsburgh, PA

A public/private partnership which invests seed funding in life sciences companies in the areas of: biotechnology; diagnostics; medical devices; therapeutics; and healthcare IT

Intern

06/08-present

The associate partners with the fund's Executive team to shepherd start-up companies from formation to revenue

- **Strategic Planning:** Created next generation strategic fund raising plan for PLSG that targeted state funds, foundations, and outside investors, the fund is currently in mid-life cycle with three exits to date in excess of \$3M
- **Market Research:** Analyzed the market and opportunity for a product entering the vascular access market in Fall 2009, and worked with a team to develop an investor presentation to raise \$1.5M
- **Analysis/Problem Solving:** Constructed a model to determine the sales force needed for a clinical trials management software start-up company targeting the academic sector

SANOFI PASTEUR, vaccines division of Sanofi-Aventis Group

Swiftwater, PA

Intern, Manufacturing Technology, Influenza vaccine (Fluzone®)

07/08 – 12/08

- **Analytical Process Development:** Conducted experiments for the development of an assay to evaluate the concentration of whole virus and split virus in vaccine samples in order to meet the EU's standards for split virus vaccines.
- **Problem Solving/Teamwork:** Collaborated with scientists and engineers to analyze data obtained from the experiments and presented the updates at weekly meetings.

ADDITIONAL INFORMATION

- Activities/Work 2006-2008: Travel, East Shore Athletic Club (Sales), marathon training, graduate school test

PARAMA SINGH

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EDUCATION

CARNEGIE MELLON UNIVERSITY Pittsburgh, PA

Master of Science in Biotechnology and Management - MSBTM

GRE Quant: 780/800

05/11

An interdisciplinary program integrating graduate coursework from the Tepper School of Business, the John Heinz III School of Public Policy & Management and the Mellon College of Science.

- Leadership: Vice President of Financial Development, Student Consulting International Organization
- Memberships: Tepper Biopharma Club, Heinz Consulting Club
- Honors: MSBTM Merit Scholarship

JAYPEE INSTITUTE OF INFORMATION TECHNOLOGY UNIVERSITY Uttar Pradesh, India

Bachelor of Technology in Biotechnology

GPA: 8.5/10.0

06/09

- RIBOSE Society, University Basketball Team, AIESEC (Delhi IIT, India)

PROFESSIONAL EXPERIENCE

PITTSBURGH LIFE SCIENCES GREENHOUSE

Associate, Marketing

Pittsburgh, PA
03/10 – Present

- **Market Research:** Perform a thorough market, competitor and risk analysis.
- **Company Analytics:** Develop and update the company review documents.
- **Marketing Communication:** Carry out extensive data mining and aid the preparation of the investment pitch.

ICHARTS INC., a web-services company focusing on data publishing and distribution

Consultant, Team Leader (content team)

Sunnyvale, CA
06/08 - 07/09

- **Project Management:** Responsible for preparation of content for the launch of the service (1000 charts from freely available data on the internet). Task completed in conjunction with a colleague in the stipulated period.
- **Supervisory Experience:** Managed a group of six people in New Delhi and coordinated work within the team.
- **Global Communication:** Facilitated effective communication between teammates and the overseas offices.

BAYER SCHERING PHARMA AG, a subsidiary of Bayer HealthCare

Summer Intern, Therapeutics Research Group (Women's Health)

Berlin, Germany
06/08 - 07/09

- **Analytical Problem Solving:** Conducted PCR-based genotyping to distinguish the various genotypes present in the facility, reducing the costs of purchasing new specimens for Research and Development.
- **Product Development:**
 - *Process Validation:* Analyzed the results of past experiments and checked for reproducibility.
 - *Discovery of Novel Products:* Performed experiments for testing new drug molecules by carrying out immunological staining and measurement using FACS analyzer.
 - *Laboratory Operations:* Sub-culturing and maintenance of adhesively growing cell lines along with active participation in various surgery techniques in comparative anatomy laboratory settings.
- **Teamwork:** Learned precepts of experimental design from senior scientists and the practical implementation of the same from the technicians.
- **Communication:** Maintained relationships with colleagues by meeting every morning to share data & collaborate.

DABUR RESEARCH FOUNDATION

Summer Intern, Pre-Clinical Research

Uttar Pradesh, India
05/08 - 06/08

- **Leadership and Initiative:** Performed in-vivo and in-vitro study on the tumorigenesis of various cancer cell strains and cytotoxicity analysis of known drugs as well as unknown substances (analysis using the MTT assay).
- **Laboratory Skills:** Drug administration (IP, IV, subcutaneous and IM), induction of tumor xenografts, calculation of tumor volumes and tumor excision; Revival, maintenance and cryopreservation of cancerous lines.

ADDITIONAL INFORMATION

- **Operating Systems:** MS Windows XP, 2000, NT, 98 and Leopard (Mac).
- **Lab Procedures:** Well acquainted with good laboratory practices for quality and safety.

Tips for Writing Cover Letters

The Goals of a Cover Letter

- a. Identifies the position for which you are applying and how you learned of it.
- b. Indicates why you are applying.
- c. Describes how your skills match the position requirements.
- d. Provides an attractive self-portrait and subliminal reasons why they should interview you.
- e. Requests information on next steps and repeats your availability, phone, and email.

Style Guidelines

- **Be Targeted:** Be specific. If possible, indicate a special reason for wanting to work for that particular employer. Discuss your interest and skills for the industry or career field.
- **Be Persuasive:** The letter should be problem-solving oriented referring to how you can meet the employer or job needs rather than simply listing accomplishments or your desires.
- **Tone:** Be clear and concise. The letter should expand upon the resume and add personal flavor. Give the impression of confidence, but not conceit. It is best not to be clever or cute, but you may choose to be creative, depending on the type of employer to whom you wish to appeal.
- **Be Accurate:** Use correct grammar, punctuation and spelling. Make certain there are no mistakes. Have career counselors and/or individuals you know critique your letters.
- **Be Specific:** Address the letter to an individual rather than to Dear Sir/Madam whenever possible. Call to get a contact if one is not known. This is important for follow-up. You will need to follow-up your letter with a phone call to confirm that it arrived and demonstrate continued interest.
- **Paragraphs:** Be brief; keep them short enough to encourage reading.
- **Paper:** Use high quality bond paper with matching envelopes.
- **Print:** Type or laser-print your letter using block or semi-block basic letter styles. The page should be well-balanced.
- **Signature:** Remember to sign your letter by hand after it is printed out, preferably in blue pen.

Note: There has been a dramatic increase of letters and resumes sent through email and the web application sites. Regardless of the communication mode being used, strong letters will produce a positive first impression. Students who send exceptional letters, on paper or electronically, are noticed and strongly considered for opportunities.

Cover Letter Outline

Your Name
Your Address
City, State, Zip
Your Phone
Your Email

Contact Person
Title
Department
Employer
Address
City State Zip

Date

Dear Mr./Ms./Mrs./Dr. etc (Contact Person)

Paragraph One: Introduction

- Brief
- Mention exact source of job information
- Upbeat and confident tone

Paragraph Two: The Why Paragraph

- Mention three reasons why you are qualified for the job (cross-reference with your resume)
- All three points must awaken the employer's curiosity
- Prioritize three points strategically (weakest point should go second)
- Keep temp of the sentence fast and smooth – read it aloud to see if it flows

Paragraph Three: The Descriptive Paragraph

- Choose the strongest point from the previous paragraph and provide an in-depth description
- Use quantifiables
- Add information of interest NOT on your resume
- Note a few interesting things about yourself – paint yourself as interesting, likeable, etc.

Paragraph Four: The Closing

- Include next steps – your contact information and plans for follow-up
- Closing – one-sentence recap of the why (don't repeat yourself) with an emphatic, confident tone without making any demands of the employer outright

Sincerely/Regards,



Your Name Typed

Sample cover letters can be found in the Heinz Career Services document [Cover Letter Guide \(PDF\)](#).

Cover Letter Language

SELF-DESCRIPTIVE WORDS

Use words like those below to add descriptive personal qualities to your letter.

Active	Detail-Oriented	Independent	Proficient
Adaptable	Determined	Logical	Realistic
Aggressive	Diplomatic	Loyal	Reliable
Alert	Disciplined	Mature	Resilient
Ambitious	Discrete	Objective	Resourceful
Analytical	Economical	Optimistic	Respective
Attentive	Efficient	Perceptive	Self-reliant
Broad-minded	Energetic	Personable	Sense of Humor
Consistent	Enterprising	Pleasant	Sincere
Constructive	Enthusiastic	Positive	Sophisticated
Creative	Extroverted	Practical	Systematic
Dependable	Honest	Productive	Thorough

ACTION WORDS

Use words like those below to connote a “spirited personality” and a “productive work ethic.”

Accelerated	Demonstrated	Led	Provided
Adapted	Developed	Managed	Recommended
Administered	Directed	Motivated	Reduced
Analyzed	Eliminated	Organized	Reinforced
Approved	Established	Originated	Reorganized
Completed	Expanded	Participated	Revamped
Conceived	Expedited	Performed	Reviewed
Conducted	Founded	Pinpointed	Revised
Controlled	Generated	Planned	Scheduled
Coordinated	Headed	Programmed	Set-up
Created	Implemented	Proposed	Structured
Delegated	Influenced	Proved	Supervised

Choosing Writing Samples

Potential employers may occasionally ask for a writing sample to be included with the cover letter and resume, typically for jobs in research, the media, or advertising and public relations.

Unless otherwise specified by the employer, choose a writing sample that is **at least two and no longer than five** pages in length. If you wish to use a longer piece of writing, extract a two to five page section of the larger work and introduce it with a paragraph or abstract which puts the selection in context (i.e. that explains what the larger work is about and how the section you've provided fits in to that larger work).

Your first consideration in selecting a writing sample is **quality**. Choose a piece that you feel is well-written over a piece that covers a topic related to the job but about which you have reservations.

This is almost as important as the quality of the writing. For virtually any job, choose a piece which reflects **the elements of good business writing**. It should be based in reality and concrete terminology (versus abstractions), be concise, conveying meaning in as few words as possible, and it should not require the reader to have any special knowledge of your topic.

Lastly, if it happens that you have written **something which relates to the job in some way** (be it content or the manner of analysis) and it is of good quality, choose that piece as your sample. For example, a case study from a business-related course would serve as a good writing sample for most management or business analyst positions. A research paper would be a good choice for virtually any research-oriented position.

Special cases: Using "creative" samples, when conveying your ability to think creatively can be important in certain fields. But even in "creative" fields, such as advertising or television, employers want to know that you can convey your ideas clearly and succinctly. Seek advice from a career counselor before submitting a creative piece as a sample.

The writing sample instructions above were developed by the Boston College Career Center.

Preparing for an Interview

The first thing to remember in an interview is that the interviewer does *not* hold all the power; you need to be interviewing the employer as they are interviewing you. Both you and the employer have to decide if you meet each other's goals, values and culture. Make sure you know what you are looking for in a company and position.

Plan for the interview questions in advance. Think about your strengths and weaknesses, and how you have developed your skills and characteristics during your classroom experiences, activities, internships, volunteerism, etc. Prepare examples from your experiences to support your answers to questions about your skills or work style. Mock interviews are helpful and can be scheduled with career advisors at any time.

Next, you need to **research the employer**. Employers are looking for candidates who have done their homework and have a general understanding of the company's products and/or services. Most companies will have a web site that is a wealth of information. In addition, alumni contacts can be helpful as well as company-sponsored information sessions. Talk to a career advisor to obtain alumni contacts.

Interview Stream

InterviewStream is a practice interview system that allows students the opportunity to see and hear themselves online. Using a webcam, you are able to simulate job interviews by responding to pre-recorded interview questions and practice both verbal and non-verbal communication skills. Afterward, all interviews are immediately accessible online for you to view or forward to your career advisor to assess and leave feedback. Questions can be customized to fit your chosen industry or role.

To get started:

1. Log into Career Navigator and “jump to” Carnegie Mellon or just logon to TartanTrak.
2. Look in the right margin towards the bottom of page for “Interview Stream”.
3. Open
4. Click on “Conduct Interview”
5. The system will step you through the question selection.

If you don't have a webcam, the Heinz College Career Center has a private space with a computer and webcam that you can use.

The Interview Structure

1. Most interviews will start out with an introduction to establish a relationship between you and the interviewer. Often they will try to help you relax by asking simple questions such as how your year is going, or if you had trouble finding parking. Even though this may be a time for you to settle in and try to relax, keep in mind that the interviewer is forming his/her first impression of you. You want to make sure you have good eye contact, wait to ask to be seated, and give the interviewer a solid handshake. Remember to have good posture, since the way you carry yourself tells about your self-confidence. In a 30-minute interview, this part of the interview will last for about **3-5 minutes**.

2. The second part is the interviewer's specific questions. The interviewer will ask a variety of topics that will range from your education, work and internship experiences, activities, career plans and self-assessment. The interviewer will use open-ended questions that will let you describe your background. The interviewer may probe into certain areas to evaluate your knowledge and background.

Your goal is to communicate clearly how your experiences lend themselves to the position. This is your chance to sell yourself. Certainly one of the goals of the interview is to determine if you have the skills and knowledge needed to do the job. In addition, the interviewer is trying to determine if you are a “fit” for the company and position. They are evaluating how you handle yourself in a stressful situation, and looking at your communication skills, self-confidence, ability to relate to others, and interest in the position. There is a lot going on in this **15-20 minute stage** of the interview.

3. The third phase of the interview is time for *your* questions. This will give you an opportunity to show you did your homework and to clarify any information that has already been provided. Carefully plan your questions beforehand. Do not ask questions which could be answered from the company website or literature, but rather are a result of what you have read.

When developing questions, consider what you need to know to make an informed decision about employment with this company. Remember that you are interviewing them as well as they are interviewing you. This phase of the interview will last about **5-10 minutes**.

4. The fourth stage of the interview is the close. The interviewer should inform you of the next step in the process. If he/she does not, you may ask in a professional manner. Express your appreciation for the

opportunity to speak with him/her and “ask for the position” by making a final statement summing up your good fit and strong interest.

The “Behavioral” Interview

Behavioral interviewing is a popular interviewing style where the interviewer will ask open-ended questions about your past experience and how you handled them to gauge how you will handle future situations. Your response should be based on the STAR system:

Situation: Identify the problem.

Task: Define your objective.

Action: Describe the steps you took to achieve your objective.

Results: Measure your effectiveness.

For example, an interviewer may ask you to describe a time when you needed to move a group to a consensus. Using the STAR system, here is a response:

I am president of Carnegie Mellon’s service fraternity and we needed to decide on our spring project. Some of the members wanted to assist a local family with home renovations while others wanted to reach more of the community and volunteer at the United Way in whatever capacity they needed. **(Situation)** My job was to facilitate the discussion between the members and reach a consensus. **(Task)** I used a flip chart and wrote down each groups’ reasons for wanting to work on their chosen project. There was discussion and then a realization that within the United Way, our family can receive many of the needed services to help them with their home. **(Action)** The decision was made for the group as a whole to work through the United Way with special attention being given to our family. **(Results)**

General Questions

1. Tell me about yourself?
2. Tell me something about yourself that is not on your resume?
3. What are your strengths?
4. What are your weaknesses?
5. Why did you choose to major in _____?
6. What are your career goals or future plans?
7. What do you know about our organization?
8. Why did you choose to interview for this position?
9. What were your grades in school?
10. What courses did you enjoy most?
11. If you had your education to do over again, what would you do differently?
12. Tell me about a typical day at _____ job?
13. What did you like about your supervisor? Dislike?
14. What kind of supervisor do you prefer?
15. What have you learned from the jobs you’ve held?
16. Which jobs have you liked best?
17. Describe your work style?
18. What skills, training and experience do you have that qualify you for the position?
19. What motivates you?
20. How do you motivate others?
21. What organizations do you belong to?
22. Have you held any leadership positions?
23. What did you learn from being involved in these organizations?
24. Are you willing to relocate?
25. Are you willing to travel?
26. What two or three accomplishments have given you the most satisfaction? Why?
27. Do you have plans for continued study?
28. Why should I hire you?

29. How do you think a friend, classmate, or professor who knows you well would describe you?
30. In what ways do you think you can make a contribution to our organization?

Behavioral Interview Questions

31. Describe a time when you were faced with problems or stresses at work or school that tested your coping skills. What did you do?
32. Give an example of a time when you had to be relatively quick in coming to a decision.
33. Tell me about a time when you had to use your spoken communication skills in order to get a point across that was important to you.
34. Tell me about a specific occasion when you conformed to a policy even though you did not agree with it.
35. Give me an example of a time when you used your fact-finding skills to gain information needed to solve a problem; then tell me how you analyzed the information and came to a decision.
36. Give me an example of an important goal you had to set and tell me about your progress in reaching that goal.
37. Describe the most significant written document, report, or presentation that you've completed.
38. Give me an example of a time when you had to go above and beyond the call of duty in order to get a job done.
39. Describe a time when you felt it was necessary to modify or change your actions in order to respond to the needs of another person.
40. Give me an example of a problem you faced on the job or in the classroom, and tell me how you solved it.
41. Tell me about a situation in the past year in which you had to deal with a very upset customer, coworker or peer.
42. Describe your most recent group effort.
43. Describe your dream job/career.
44. Describe the most creative project you have completed.
45. Give me an example of when you felt you were able to build motivation in your coworkers or peers.
46. Give an example of a time when you had to be relatively quick in coming to a decision.
47. Give an example of a time when you could not participate in a discussion or could not finish a task because you did not have enough information.

Practice Interview Questions

1. Tell me about yourself?
2. What are your motivations for applying to this position/company?
3. How are you going about your job search?
4. Why do you want to work in this industry?
5. What is your career plan?
6. What are your strengths?
7. What are your areas for improvement?
8. Why did you choose this masters program?
9. Tell me about a time you failed?
10. Tell me about a time you encountered people of different backgrounds?
11. Tell me about a difficult challenge you had to overcome?
12. Tell me about a time when you had multiple things to do at the same time, how did you handle it?
13. Tell me about a time when you didn't get along with a teammate or co-worker?
14. Tell me about a time when your ethics were challenged?
15. Tell me about a time when you learned a new technology quickly?
16. Tell me about a time when you were unable to meet a deadline?
17. Tell me about a time when you had the opportunity to lead a team?
18. Describe a time when you felt it was necessary to modify or change your actions in order to respond to the needs of another person.
19. Give me an example of a problem you faced on the job or in the classroom, and tell me how you solved it.
20. Tell me about a situation in which you had to deal with a very upset customer, coworker or peer.
21. Describe your most recent group effort.
22. Describe your dream job/career.
23. Describe the most creative project you have completed.
24. Give me an example of when you felt you were able to build motivation in your coworkers or peers.
25. Give an example of a time when you had to be relatively quick in coming to an important decision.

Sample Questions to ask the Interviewer

1. Can you tell me in detail about the duties of this position?
2. Why did this position become available?
3. What will the training program be like?
4. How long do people typically stay in the position?
5. Where do people go after they leave the position?
6. What characteristics are you looking for?
7. What major challenges is this organization facing?
8. What are the challenges, negative aspects or positive aspects of this position?
9. What advanced training programs are available for those who demonstrate outstanding ability?
10. What are the organization's growth plans?
11. What is the next step in the selection process?
12. Where do you see me in five years if I join and succeed with your organization?
13. How will my performance be evaluated?
14. How are employees rewarded for excellent performance?
15. What is the attrition rate of new hires within one/three/five years?
16. How does this position and department fit into the organization as a whole?
17. How would you describe the work atmosphere in the organization?
18. What would I be expected to accomplish in the first six months on the job? In the first year?
19. Does the job require much travel?
20. What are the chances of being relocated after starting the job?

More interview tips and questions can be found in the Heinz Career Services [Interview Skills Guide \(PDF\)](#).