

## The Business of Science: Experiencing the Scientific Method as your Guide to Career Success

Enhance your communication, leadership, and teambuilding skills that all employers value by taking SciPhD's *The Business of Science*, the same course being offered at New York Academy of Sciences, NYU, Rutgers, UCSF and other universities as part of their NIH BEST programs. This leadership development course for scientists and engineers will not only help you develop business and soft skills that are vital for success in all careers, but will teach you how to differentiate yourself from your competitors when applying for jobs.

At the New York Academy of Sciences, last year **95 percent** of individuals who participated in the course and took the survey stated that they were better prepared to work in teams and lead others as a result of taking *The Business of Science*. The same percentage of people stated that they would also recommend this course to friends and colleagues who are seeking leadership positions. Of the people who were applying for jobs while taking the course, **90 percent** stated that *The Business of Science* helped them land an interview or job offer!

After taking *The Business of Science*, you will be able to:

- Understand the business processes that drives science in industry and how your own experiences enhance your qualifications
- Understand how business processes follow the principles of the scientific method
- Define your real employment value in terms of your scientific, business and social identities
- Learn the many career paths where the PhD can be an advantage- from bench scientist to technical writer to investment analyst
- Research a job ad and the company to identify the critical scientific, business and social skills they are looking for
- Develop a targeted resume that demonstrates why you are qualified for the job
- Build your high quality network to enable you to gain intelligence and get your resume on the hiring manager's desk
- Experience the communications skills that enable you to build strong relationships, productively interact with people regardless of their personalities, and elevate you as a team player

- Understand the essentials of strategic project management and how to apply your business and social skills to be a contributing project team member
- Experience the basic styles of leadership and how you integrate into a company to be an effective team member
- Experience team improvement methods that advance your workgroup to be more like a high performing team
- Draw on everything you've learned, experience the application of communications, leadership and business process in managing a company, buying and selling assets and making successful business decisions

## Full Course Description

With the shift in the available jobs moving beyond academia to industry, non-profit organizations and other non-academic settings, understanding the skills necessary to compete and succeed in these settings is critical. Traditional graduate and post-graduate programs focus primarily on developing scientist's *technical identity* by training scientists to think analytically, but often neglect to develop their *business and social identities*. Communications, performance management, and team building are critical skills in order to be competitive in all careers. This certificate program introduces the key competencies that are valued by hiring organizations for entry-level positions, and essential for career success. Based on the SciPhD training program, this course focuses on 24 essential core competencies valued by industry and business, relates those competencies to activities and behaviors commonly experienced by academic scientists through the scientific method, and demonstrates how those competencies work together to form the operational competencies that are essential in business. These transition business competencies can also be applied by academic and government scientists in running their laboratories.

The 24 competencies at the heart of this course fall into six categories:

### Creating the Vision

- Strategic
- Technical Scientific
- Innovative
- Risk Management
- Champion/Energy

### Developing People

- Collaboration
- Enabling
- Empathy
- Rapport

### Execution

- Structuring
- Control
- Tactical
- Delegation

### Achieving Results

- Production
- Focus
- Competition

### Communications/Learning

- Technical Literacy
- Style Flexibility
- Emotional Intelligence
- Social Intelligence

### Financial Acumen

- Return on Investment
- Internal Rate of Return
- Determining Performance Metrics
- Managing the Balance Sheet

Despite the fact that these topics are rarely part of the traditional academic research scientist's curriculum, there are many activities associated with the academic experience that draw on these skills. One of the most effective and unique features of this program is how the instructors relate these “business” concepts to common research activities as a bridge to a deeper understanding of how their own experiences can strengthen their competitiveness for industry positions. The course also provides a self-assessment tool that introduces the students to each of the 24 competencies, has them rank their own skill level, and has them develop “experience statements” from their own career that supports their rankings. A detailed report generated by the assessment tool then maps the student's capabilities to those that are critical to different kinds of jobs in different industries. The instructors will then show how to use this information to develop powerful targeted resumes, and prepare for effective interviews.

This course is offered over five sessions. In order to receive a certificate of completion, students must attend 80% of the classes of the course.

<b>Date</b>	<b>Hours</b>	<b>Session Title</b>	<b>Instructor</b>
Monday Feb 1, 2016	5-8	1 <sup>st</sup> Interview, Business of Science	HW
Saturday Feb 6, 2016	10-6	Communications, Elevator Pitch & Negotiation, 2 <sup>nd</sup> Interview	HW
Saturday Feb 13, 2016	10-6	Networking & Preparing for Interviews, Behavioral Based Interviewing, Developing Your People, VIP Networking Event	HW
Saturday Feb 20, 2016	10-6	Building Effective Teams, Six Leadership Styles 3 <sup>rd</sup> interview	HW
Sunday Feb 27, 2016	10-6	Finance, Project Management, 4 <sup>th</sup> interview & Business of Science Revisited	HW

### **Interviews**

Throughout the program, students will experience the behavioral interview process, both as candidate and interviewer. These perspectives become extremely valuable in understanding the kinds of skills and traits company representatives are looking for and value in a candidate. Each of the four interview experiences builds on the previous ones and are designed to incorporate new knowledge gained during the course. By the end of the program, students will understand how to prepare for the interview process, develop and represent themselves, know how to apply advanced communications skills in managing the experience, and maximize their opportunities.

## **Session Descriptions**

Note: There are multiple sessions that will be covered on the individual days. For clarity, the course content details are described by the individual topics rather than the days that they occur.

### ***Session 1: The Business of Science***

Designing scientific projects, planning the work, assembling and leading a team to execute that work, monitoring progress, reporting the results and iterating that process is the hallmark of the scientific method. Whether this process is performed in industry, academia, or government settings, there are essential business best practices that maximize performance and success. The desire of many academic institutions to apply their research efforts more directly to impacting treatment of human disease through translational research increases the importance of mastering these business and social skills.

Students will be introduced to 24 core business and social competencies that are valued by industry for entry level positions, and that will help get the most out of their research team regardless of whether they pursue a career in industry, academia or government. We will look at the significant breadth of job types that can lead to a senior professional position in the future and the core competencies necessary to excel in these positions. Students will also learn to use an online self-assessment instrument to determine their own abilities in each of these areas and how to identify the specific combinations of skills necessary for specific kinds of jobs. Based on the results of the self-assessment, students will learn how to relate their own scientific and life experiences to those critical competencies and turn perceived liabilities into a competitive advantage by expressing these experiences in appropriate business language in developing a targeted resume. Students will also be introduced to how these business and social skills can be leveraged to expand their networks, and enhance their performance during the interview process.

At the end of this session, students should be able to identify the top three objectives they want to achieve by the end of the course.

### ***Session 2: Successful Communications as a Scientist***

Recent PhD graduates learn and adapt communication skills mostly experientially in an academic and research environment. They learn from peers, teachers, supervisors and from their social life. The result is communication skills that are content and small group oriented (mostly other science people).

Successfully working in industry requires a much higher communication skill level with an orientation beyond content and focused on building relationships with diverse functional groups (e.g. marketing, finance, legal), style groups (e.g. Introvert, Extrovert, Judging, Intuitive) and socially identifiable groups (e.g. green, capitalist, academic, shareholders). These higher level skills must be deployed in both an advocate and non-advocate social orientation. Science communications should always be both personal and global, advocate and non-advocate, content and relationship oriented.

In this session, participant behavior will accomplish the following:

1. Using the content, affective and social components of a communication message, deliver a scientific findings statement in an advocacy and then non-advocacy style.
2. Construct a scientific message for each class of public audience communication styles to include: Introvert, Extrovert, Sensing, Intuitive, Logical, Affective, Judging and Perceptive.
3. Defuse and reframe an attack on one's science credibility using the skills of Active Listening, Emotional Intelligence, Social Reframing and Communication Calculus.
4. Using scientific findings, expand a typical research result statement to be provided for the following audiences and outcomes:
  - a. a technical audience to understand
  - b. a public audience with an affective acceptance criteria (why should I care)
  - c. a social media audience with the outcome of their willing advocacy (e.g. retweet) of your finding
  - d. a doubtful audience to begin a fostering and trusting relationship
5. Apply newly learned communications skills in following scenarios:
  - a. Networking
  - b. Interviewing

### ***Session 3: Negotiating as a Scientist***

In this session we will learn about the two major types of negotiation strategies: distributive, and integrative, and how to apply those strategies along with the communications skills learned in the previous session to successfully negotiate with others, including your advisor. These skills can be applied in negotiating agreed objectives and timelines for finishing your program, managing process of leaving the laboratory to pursue a professional position, and doing so without burning bridges.

### ***Session 4: Applied Communications and Networking***

In this session we will demonstrate how to build an effective network by leveraging your professional and social contacts along a path to becoming a successful professional. We will model the use of your network along with the business and social skills learned throughout this course to develop and execute a targeted interview strategy. We'll also review key learning points from each session and how they all tie together to enhance your performance whether in academia, government, research or industry. Each participant will leave this course with new knowledge in developing his or her short and long-term career plans. In this final session we will accomplish the following:

1. Identify at least 3 key resources for building your business and social networks
2. Practice new communication and personality techniques in phone and onsite interviews.
3. Establish a career plan that maps your goals for the next 5-7 years
4. Work in small teams applying your new skills to solve a REAL problem

### ***Session 5: Developing Your People***

The pedagogical environment of academia works well in a knowledge based culture. In industry, the emphasis is on putting knowledge to work and the success measure is performance. These performance measures are increasingly being linked to building the capacity of work team members to constantly improve skills and competencies. New professionals in industry must be prepared to both drive their own continued professional development AND drive the continued development of all people who they manage, supervise or lead, or with whom they share work goals.

This session will focus on helping the participant learn and implement one of the most accepted and utilized performance management methods used to develop people in industry. The Situational Leadership Theory (SLT) of Paul Hersey and Ken

Blanchard will serve as a practical model to learn and apply methods to help other people succeed.

In this 3 hour experience, participant behavior will accomplish the following:

2. Experience the 4 stages of developing oneself to a performance level
3. Evaluate an unnamed coworkers' performance using the SLT model
4. Design and implement a development plan for a coworker to move them to the next stage of the SLT.
5. Provide an experiential example for use on a resume that would demonstrate the ability to enable others to succeed in a work environment.

### ***Session 6: Building Effective Teams***

The new PhD graduate entering the industrial or any workforce can accelerate their career by demonstrating their ability as an attentive team member AND by demonstrating their capacity to LEAD a small team. Previous academic experience with teams (if any) will be the starting point to launch this set of six (6) additional front line tools to help make team performance more efficient and effective.

Successfully working in industry requires flexible and adaptive behaviors that can pull from a variety of proven performance management tools. Based on the participant's previous experiences with teamwork, six (6) new team management tools will be integrated into the natural leadership style of the participant that will enable the participant to both play a more comprehensive team member role as well as take responsibility as a team leader of a small group. These same six (6) tools can be applied to an academic/research environment.

In this experiential learning session, participant behavior will accomplish the following:

1. Apply each of the 6 tools to a current work opportunity as a team member and/or as a leader
2. Select 3 of these 6 tools which will be the participant's key deployable first line enhancement opportunities: Process Mapping and Value Added Analysis, Benchmarking, Continuous Improvement, Brainstorming, Priority Matrix, and SWOT Analysis.

3. Provide an experiential example for use on a resume that would demonstrate the ability to enable a small team to improve efficiency and/or effectiveness as a team member and/or as a team leader.

### ***Session 7: Six Leadership Styles***

Most established academic scientists have spent their entire careers in academia. As a result, newly graduating science professionals learn about and experience leadership styles that are common within an academic setting. They learn from peers, teachers, and their Principal Investigators. In industry, there are generally six leadership styles that drive culture, management and leadership that are not common to academic settings. Thus, newly graduating PhDs have a very limited understanding of these six leadership styles and how they can be effectively used in their first year in a company.

The vast majority of failed employments in the first year of professionals are less about technical competence and more about aligning work practices with cultural and executive leadership expectations. The quicker the new professional can “read the culture”, the quicker they are valued for their technical competency AND their social integration with the TEAM.

In this session, participant behavior will accomplish the following:

1. Identify leadership behaviors that relate to one or more of the 6 primary leadership types.
2. Rank the capacity of the participant to integrate with each of the 6 leadership types.
3. Demonstrate behaviors that the participant could perform that would align with the preferred leadership style of an institution

### ***Session 8: Practical Project Management for Scientists***

Students will learn the three cornerstones of project management: “time”, “cost” and “objectives”, and how to manage those three critical entities using combinations of the 24 core competencies introduced in the first session. Students will learn the importance of tactical planning, communications, negotiation, and control in being an effective project manager. Students will become familiar with the tools and language of project management so that they can more effectively fit into cross-matrixed teams, and in some cases even assume the role of project manager. Examples drawn from familiar scientific experiences will be used to demonstrate

the various aspects of effective project management, the benefits of it being used properly, and the consequences when it is not. Upon completion you will be able to:

1. Look at any project and immediately determine who is your customer (you can only have one!)
2. Identify the critical objectives
3. Develop a project plan to meet those objectives.

### ***Session 9: Financial Literacy***

In this session we will discuss basic concepts of business finance that will benefit you as a manager. This will include learning how to read a balance sheet, understanding the concepts of return on investment, and how money is put to work in your organization. Through our “*learn by doing*” approach, students will experience running a multi-million dollar company, negotiating with investors and banks, establishing partnerships with other companies and navigating mergers and acquisitions. We will also discuss and experience how to apply the communications and leadership skills that you have learned in order to be effective at negotiating with team members, as well as when considering job offers, and negotiating benefits that include salary, stock options, performance review timetables, and career advancement opportunities.

## Selected Testimonials from Previous Courses

“The course helped me understand how to translate the skills I have from my research and make it applicable to industry, especially for non-research positions. I used these skills in applying for the position I’m currently being considered and expecting an offer for. I now have a better understanding of interpersonal communication and the forces that govern it. I’ve always thought of myself as a good communicator, but Larry and Randy showed me important nuances that made me even better. It helped me understand the road-blocks to effectively communicating with and developing a student I had been supervising!”

“It helped me to develop the soft skills better on a broad scale, facilitate interactions in the academic environment, raise awareness when interacting with people from industry, finance, etc., improve managerial skills on the day-to-day basis and especially become savvier when negotiating things, applying for a job, getting the resume in tiptop cutting edge format”

“Both Randy and Larry were super-approachable and available for individual discussions after class. -The venue was beautiful--even though I was tired at the end of the day, I looked forward to going to class. -For me, taking the course coincided with my academic job search and the interview process. The course really kept me in the mindset of transitioning to becoming a faculty member. Soon after the course ended, I got my first offer! -Thanks to the course content, I now feel prepared to manage my own lab.”

“The Scientist to CSO course has helped me broaden my horizons. As scientists, we tend to spend almost all our time in our little cocoons. The Scientist to CSO course introduced me to several important and broadly relevant concepts in the management of both people and projects and I have found these ideas extremely beneficial in my current activities as a research scientist in industry.”

“What I learned in the CSO course was very helpful during [my job] selection process (especially everything related to communication), and I hope it will help me to keep my job for a very very long time.”

“Thank you very much for the opportunity to take this great course at the New York Academy of Sciences! I enjoyed taking these classes with you [Tom Magaldi], Larry and Randy! I attribute the success of my key [job] interview in large part to speaking with Randy three days before meeting with my [hiring] manager, as well as the overall class content.”

“The class gives you the frameworks that help understand where scientists fit within business realms, and gives one the vocabulary to describe things one already does in a business-friendly way. This class, unlike anything offered by university career services, helps to understand how, as a PhD, one is seen by the business people. It gives students both the knowledge about the business world and the confidence to go for it. I would highly recommend the class.”

## Course Instructors

Larry Petcovic  
Human Workflows

Larry Petcovic brings 25 years of rich experience in a variety of industries; publicly and privately held companies, midsize (100MM) and larger (1.5B); in operational and staff positions. His entrepreneurial spirit and startup experience bring a pragmatic approach to his executive coaching techniques and his developing talent as in the SciPhD project of Humanworkflows. Larry is a Founder of 3rd Order Communications LLC and a Co-Founder of SciPhD.

He started his professional career as a Health Physicist and transitioned into the training of science subjects. He then managed all training for Ryland Group and specialized in sales and communications impact. Larry then pursued the GE workout process and directed process improvement programs for Ryland. He transitioned to assignments as VP of Training and VP Customer Service Operations for Chevy Chase Credit Card Operations. In the role of VP Human Resources, he managed a leverage buyout of a manufacturing firm. Throughout these roles, he continued to perform as Chairman of the Compensation Committee of a \$100 Million NASDAQ service company for 15 years.

The SciPhD program is the result of the combination of Larry's many years of experience in developing and teaching social communications skills combined with his scientific and human resources industry knowledge and best practices. Larry continues to coach industry executives in high performance teams and is a qualified coach in several 360 and Leadership Effective Analysis type assessments. His work in behavioral competencies is based in his current research in the social neurosciences and social media practices.

Larry holds a BS in Chemistry, an MS from Rutgers University in Environmental Radiation Sciences, an MS from Johns Hopkins University in Behavioral Sciences and doctoral work in Executive Development at George Washington University. He is the

creator of several unique team based diagnostic exercises and continues to write and explore the social neurosciences and stochastic decision making in executive communications.

Randall Ribaudó, PhD  
Human Workflows

Human Workflows and SciPhD co-founder Dr. Randall Ribaudó has over twenty years of experience in the Scientific Research and biotechnology field and has successfully made the transition from academia to industry. Dr. Ribaudó co-founded Human Workflows after more than five years at Celera Genomics. During his time at Celera, Dr. Ribaudó has acted as a liaison between Celera and the pharmaceutical, biotechnology and academic communities, served as product manager responsible for developing support products for the Proteomics Groups mass spectrometry software, led the iScience Task Force to define strategic directions for sister company Applied Biosystems, advised on product development for the Celera Discovery System and enterprise solutions for information integration, and worked as a Manager of Strategic Solutions in the Informatics business.

Prior to Celera, Dr. Ribaudó worked at the biotechnology and bioinformatics company Molecular Applications Group. Dr. Ribaudó was responsible for presenting the revolutionary capabilities of MAG's products to representatives in the pharmaceutical, biotechnology and academic communities.

Dr. Ribaudó also has extensive experience in the academic biological life sciences arena as well. After receiving a Ph.D. in Immunology at the University of Connecticut, Dr. Ribaudó joined the Laboratory of Immunology, NIAID at the National Institutes of Health where he studied the molecular basis of antigen presentation. Dr. Ribaudó then accepted a position in the National Cancer Institute in the Laboratory of Immune Cell Biology as a Principal Investigator where he developed his own research program studying the immune response to viruses and tumors, leading a team of postdoctoral fellows, technicians, and University and High School students. His work at the National Cancer Institute led to the development of a novel technology to develop vaccines against tumors and viruses. Dr. Ribaudó holds patents for this technology which are now being further developed by private companies.

All of this experience has provided Dr. Ribaudó with tremendous insight into the rapidly exploding technological capabilities in areas of discovery research, information and data management, as well as a detailed understanding of the skills and competencies required for scientists to be successful in industry careers.