The Business of Science For Scientists: Preparing for Leadership Positions in your Professional Career

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 postgraduate programs focus primarily on developing scientists technical identity by training scientists to think analytically, but often neglect to develop their business and social identities. Communications, performance management, team building are critical skills in order to be competitive outside academia. 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, 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. The course will be taught over five sessions including one 3-hour Monday evening and four 8-hour Sunday sessions.

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<thead>
<tr>
<th>Date</th>
<th>Hours</th>
<th>Session Title</th>
<th>Instructor</th>
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<tbody>
<tr>
<td>Monday Jan 5, 2015</td>
<td>6-9</td>
<td>1st Interview, Business of Science</td>
<td>HW</td>
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<tr>
<td>Sunday Jan 11, 2015</td>
<td>10-6</td>
<td>Communications, Elevator Pitch &amp; Negotiation</td>
<td>HW</td>
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<td>Sunday Jan 18, 2015</td>
<td>10-6</td>
<td>Networking &amp; Preparing for Interviews, Behavioral Based Interview, Developing Your People, 2nd Interview</td>
<td>HW</td>
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<td>Sunday Jan 25, 2015</td>
<td>10-6</td>
<td>Building Effective Teams, Six Leadership Styles 3rd interview</td>
<td>HW</td>
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<tr>
<td>Sunday Feb 1, 2015</td>
<td>10-6</td>
<td>Finance, Project Management, 4th interview &amp; Business of Science Revisited</td>
<td>HW</td>
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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.

One of the most effective and unique features of this program is how the instructors relate these business competencies to the Scientific Method and associated research activities and behaviors commonly experienced by academic scientists. This approach helps students gain an awareness and deeper understanding of how their own experiences can strengthen their competitiveness for industry positions.

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

<table>
<thead>
<tr>
<th>Creating the Vision</th>
<th>Execution</th>
<th>Communications/Learning</th>
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<tr>
<td>Strategic</td>
<td>Structuring</td>
<td>Technical Literacy</td>
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<td>Technical Scientific</td>
<td>Control</td>
<td>Style Flexibility</td>
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<td>Innovative</td>
<td>Tactical</td>
<td>Emotional Intelligence</td>
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<td>Risk Management</td>
<td>Delegation</td>
<td>Social Intelligence</td>
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<td>Champion/Energy</td>
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<th>Developing People</th>
<th>Achieving Results</th>
<th>Financial Acumen</th>
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<tr>
<td>Collaboration</td>
<td>Production</td>
<td>Return on Investment</td>
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<td>Enabling</td>
<td>Focus</td>
<td>Internal Rate of Return</td>
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<td>Empathy</td>
<td>Competition</td>
<td>Determining Performance Metrics</td>
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<td>Rapport</td>
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<td>Managing the Balance Sheet</td>
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This course is offered over

**Session Descriptions**

**Session I: 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 CSO 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, bosses 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 8 hour experience, 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:
   1. a technical audience to understand
   2. a public audience with an affective acceptance criteria (why should I care)
   3. a social media audience with the outcome of their willing advocacy (e.g. retweet) of your finding
   4. a doubtful audience to begin a fostering and trusting relationship
5. Apply newly learned communications skills in following scenarios:
   1. Networking
   2. Interviewing
   3. Negotiations

Session 3a: Networking & Preparing for Interviews, Behavioral Based Interviewing
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 CSO. 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 3b: 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 model and present the results of that plan during the First Line Supervision Class on Nov 17.

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 4a: 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 6 hour experience, participant behavior will accomplish the following:

1. Rank the 6 tools in preference to a participant’s natural leadership style and likelihood of deployment
2. Apply each of the 6 tools to a current work opportunity as a team member and/or as a leader
3. Select 3 of these 6 tools which will be the participant’s key deployable first line enhancement opportunities: Process Mapping, Continuous Improvement, Benchmarking, Best Practices, Brainstorming, Priority Matrix and SWOT.
4. 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 4b: 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 2 hour experience, 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 5a: Finance and Negotiating your Compensation Package**

In this 3 hour session we will discuss basic concepts of business finance that will benefit you as a manager. Participants will buy and sell various companies and assets as part of a 400 million dollar market exercise. 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. We will also discuss 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.

**Session 5b: 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 5c: Business of Science Revisited
During this session we will review the key learning points from each of the eight major learning areas, discuss how they interrelate and how they apply to the students current and future situations. At the end of the program, students should have a clear action plan on how to gain the critical experiences and accomplishments they need to be competitive, how to brand and communicate those skills in both written (resume, cover letter) and spoken (interviews, networking) form, and how to execute an action plan that will put them on the path to a successful professional career.

Interviewing Experiences
During the course of the program, all students will experience the behavioral-based interview process at least four times. Students will be guided in how to search for a job that would truly interest them, and apply for that job in our mock-interview sessions in which students will experience the role of interviewer and candidate. The interview exercises are distributed throughout the lifecycle of the course so that students can implement new knowledge and skills to improve their interview performance.