

# BioInnovation Scientist Program

## – Syllabus –

### 1. Program Goal

The BioInnovation Scientist (BIS) Program is designed to provide early career science professionals with the foundational knowledge and skills to succeed in their careers in the Canadian life sciences industry.

### 2. Overview

The BIS Program is an online, asynchronous program consisting of both curated and proprietary material that introduces learners to the world of drug discovery, drug development, and drug commercialization. Additionally, the program prompts learners to develop their business acumen through a series of carefully selected soft skills courses and relevant “real world” practice activities.

The following diagram provides a high-level overview of the program.



### 3. Eligibility criteria

adMare is focused on building Canada’s life sciences ecosystem and training the next generation of talent to see its growth into a sustainable industry. As such, we are pleased to welcome those who fall in these categories:

- Canadian citizens, permanent residents, and anyone currently working or studying in Canada.
- Anyone with a Bachelor of Science or higher (STEM undergraduate students may be accepted on a case-by-case basis).

### 4. Additional requirements of BIS participants

- Have access to a PayPal or a credit card account in order to register for the Coursera learning platform (NB: adMare will reimburse Coursera Plus subscription fees for all learners who successfully complete the Coursera Plus courses within their stipulated timelines)
- LinkedIn account to pursue theory and practice activities (can create when joining the program)
- Join the adMare Community, Canada’s first and only digital platform for the life sciences industry

### 5. Learner Expectations

In order to earn a BIS Completion Certificate, all assigned courses must be completed, along with any activities / assessments.

The BIS program is flexible (online, asynchronous, and go-at-your-own pace) and meant to fit into your busy schedule. Learners are expected to invest around 3-5 hours per week on this program in order to complete the curriculum within approximately 5-6 months. Specific time estimations are available in the Program Structure Tables.

## 6. Program Structure

The BIS Program is split into 5 sections (not including the introductory Section):

<b>Section 1: Drug Development and Product Management</b>		
Course Provider: University of California San Diego (accessible through the Coursera platform)		
<b>Course Name</b>	<b>Learning Objectives</b>	<b>Estimated Duration</b>
<b>Drug Discovery</b>  By Dr. Williams S. Ettouati & Dr. Joseph D. Ma	<ul style="list-style-type: none"> <li>• Understand the pharmaceutical and biotechnology marketplace (an everchanging landscape)</li> <li>• Learn the major aspects of drug discovery, from target selection, to compound screening, to designing lead candidates</li> <li>• Recognize drug discovery based on the lock-and-key theory, which attempts to use one single compound to hit one target to combat the related disease</li> <li>• Increase understanding of the various drug discovery tools and methods that are used for finding, identifying, and designing a new drug</li> <li>• Define and understand the regulatory responsibilities to file an Investigational New Drug Application (IND)</li> </ul>	9 hrs
<b>Drug Development</b>  By Dr. Williams S. Ettouati & Dr. Joseph D. Ma	<ul style="list-style-type: none"> <li>• Understand Phase 1 or early-stage clinical trials to determine how a new drug works in humans (safety profile and dosage range)</li> <li>• Learn about Phase 2 or Proof of Concept (POC) studies that test for efficacy, safety, and side effects in a group of patients with a disease for which the new drug is being developed</li> <li>• Recognize the elements of Phase 3 or late-stage clinical development for larger groups of patients, to determine if the new drug can be considered both safe and effective in controlled trials</li> <li>• Increase understanding of the Product registration and approval processes in individual countries as required for a product to be marketed</li> </ul>	10 hrs
<b>Drug Commercialization</b>  By Dr. Williams S. Ettouati & Dr. Joseph D. Ma	<ul style="list-style-type: none"> <li>• Understand Pharmaco-economic, marketing strategy, intellectual property strategy, portfolio management, managed markets, and strategic alliances. Includes a case study from start-up to success.</li> <li>• Learn about post-marketing clinical trials or Phase 4 trials conducted after a new drug has been approved by the regulatory agencies and launched.</li> <li>• Recognize that Pre-marketing strategy should be instigated as early as Phase 1 clinical trials to ensure that the market's needs are incorporated into the new drug's overall development.</li> </ul>	13 hrs

<b>Section 2: You &amp; Your Career</b>			
Course Provider: LinkedIn Learning			
<b>Course Name</b>	<b>Learning Objectives</b>	<b>CEU - Continuing Education Units</b>	<b>Estimated Duration</b>
<b>Leading Yourself</b>  By Elizabeth (McLeod) Lotardo and Lisa Earle McLeod	<ul style="list-style-type: none"> <li>• List the three primary sources of internal motivation</li> <li>• Recognize how strategic goals can help you achieve success</li> <li>• Name three areas of focus when evaluating your own performance</li> <li>• Recall a method for mentally rebounding after a failure</li> <li>• Identify strategies that will encourage your peers</li> </ul> <p>           ✓ Contains Exam            ✓ Skills covered: Accountability         </p>	<ul style="list-style-type: none"> <li>• National Association of State Boards of Accountancy (NASBA)               <ul style="list-style-type: none"> <li>◦ Continuing Professional Education Credit (CPE): 2</li> <li>◦ Recommended NASBA Field of Study: Personal Development</li> </ul> </li> <li>• Project Management Institute (PMI)®               <ul style="list-style-type: none"> <li>◦ PDUs/Contact Hours: 0.75</li> </ul> </li> </ul>	51m
<b>Efficient Time Management</b>  By Chris Croft	<ul style="list-style-type: none"> <li>• Managing your inbox</li> <li>• Managing repetitive tasks</li> <li>• Using lists and calendars</li> <li>• Maximizing spare time</li> <li>• Organizing information digitally and on paper</li> <li>• Getting the most out of technology and software</li> <li>• Writing effective email</li> <li>• Reducing filing</li> </ul> <p>           ✓ Contains Chapter Quizzes and Exercise Files            ✓ Skills covered: Time Management         </p>	<ul style="list-style-type: none"> <li>• Project Management Institute (PMI)®               <ul style="list-style-type: none"> <li>◦ PDUs/Contact Hours: 1.75</li> </ul> </li> </ul>	1hr 58m
<b>Developing Your Emotional Intelligence</b>  By Gemma Leigh Roberts	<ul style="list-style-type: none"> <li>• What is emotional intelligence?</li> <li>• Watching for triggers and hijacks</li> <li>• Finding flow</li> <li>• Disrupting thinking</li> <li>• Reclaiming reaction time</li> <li>• Shifting perspective</li> <li>• Empathizing</li> <li>• Listening and communicating</li> <li>• Playing to strengths</li> <li>• Collecting feedback</li> </ul>	<ul style="list-style-type: none"> <li>• Project Management Institute (PMI)®               <ul style="list-style-type: none"> <li>◦ PDUs/Contact Hours: 1</li> </ul> </li> </ul>	1 hr

	<ul style="list-style-type: none"> <li>Aligning intention and impact</li> <li>Contains Exercise Files</li> <li>Skills covered: Emotional Intelligence</li> </ul>		
<b>Becoming Assertive: Advocate for Your Interests</b>  By TJ Guttormsen	<ul style="list-style-type: none"> <li>Fundamentals of communication, including practical strategies to start and build conversations</li> <li>Speech, eye contact, and body language, as well as the importance of being succinct</li> <li>Ways to stand out from the crowd</li> <li>Maintaining a calm and respectful demeanor to be assertive with authority figures</li> <li>Action steps to help you practice being more assertive in ways that will improve your life</li> </ul> <p>✓ Skills covered: Interpersonal Communication; Self-confidence</p>	N/A	52m

<b>Section 3: Working in a Team</b>			
Course Provider: LinkedIn Learning			
Course Name	Learning Objectives	CEU - Continuing Education Units	Estimated Duration
<b>Communicating With Empathy</b>  By Sharon Steed	<ul style="list-style-type: none"> <li>What is empathy?</li> <li>How to be empathetic at work</li> <li>Practicing positive communication</li> <li>Identifying communication styles</li> <li>Approaching difficult conversations</li> <li>Practicing empathy in groups</li> </ul> <p>✓ Contains Exam            ✓ Skills covered: Interpersonal Communication; Emotional Intelligence</p>	<ul style="list-style-type: none"> <li>Project Management Institute (PMI)®               <ul style="list-style-type: none"> <li>PDU/Contact Hours: 1</li> </ul> </li> </ul>	37m
<b>Giving and Receiving Feedback</b>	<ul style="list-style-type: none"> <li>Getting comfortable asking for feedback</li> <li>Overcoming blind spots</li> <li>Creating a growth mindset</li> </ul>	<ul style="list-style-type: none"> <li>Project Management Institute (PMI)®</li> </ul>	48m

By Gemma Leigh Roberts	<ul style="list-style-type: none"> <li>• Giving effective and unbiased feedback</li> <li>✓ Contains Exercise Files</li> <li>✓ Skills covered: Constructive Feedback</li> </ul>	<ul style="list-style-type: none"> <li>o PDUs/Contact Hours: 0.75</li> </ul>	
<b>Transformational Leadership</b> By Henna Inam	<ul style="list-style-type: none"> <li>• Explain the importance of purpose and vision</li> <li>• Define purpose</li> <li>• Identify elements that prevent a transformational leader from driving innovation</li> <li>• Recognize the purpose of encouraging curiosity</li> <li>• Recall the characteristics of intrinsic motivation</li> <li>• Distinguish among the behavioral symptoms' employees have towards change in the work environment</li> <li>• Name the person to start with when you decide to become a transformational leader</li> <li>✓ Contains Chapter Quizzes, Exam, &amp; Exercise Files</li> <li>✓ Skills covered: Transformational Leadership</li> </ul>	<ul style="list-style-type: none"> <li>• National Association of State Boards of Accountancy (NASBA)             <ul style="list-style-type: none"> <li>o Continuing Professional Education Credit (CPE): 2</li> <li>o Recommended NASBA Field of Study: Business Management &amp; Organization</li> </ul> </li> </ul>	1h 7m
<b>Project Management Simplified</b> By Chris Croft	<ul style="list-style-type: none"> <li>• Describe a project and its constraints.</li> <li>• Interpret the appropriate level of granularity of tasks.</li> <li>• Determine the importance of a project's critical path.</li> <li>• Explain how to calculate and add contingency to a project.</li> <li>• Analyze the data within a risk chart.</li> <li>• Interpret the challenges of monitoring costs and identifying when to adjust the project plan.</li> <li>✓ Contains Chapter Quizzes &amp; Exam</li> <li>✓ Skills covered: Project Management</li> </ul>	<ul style="list-style-type: none"> <li>• National Association of State Boards of Accountancy (NASBA)             <ul style="list-style-type: none"> <li>o Continuing Professional Education Credit (CPE): 4.4</li> <li>o Recommended NASBA Field of Study: Personal Development</li> </ul> </li> <li>• Project Management Institute (PMI)®             <ul style="list-style-type: none"> <li>o PDUs/Contact Hours: 1.5</li> </ul> </li> </ul>	1h 44m

<b>Section 4: Integration Course</b>		
Course Provider: adMare Academy		
<b>Course Name</b>	<b>Learning Objectives</b>	<b>Estimated Duration</b>

<p><b>Integration Course</b></p> <p>By Doug Erfle &amp; Dr. Edie Dullaghan</p>	<ul style="list-style-type: none"> <li>● Review the full drug development process, and gain an introduction to the PMBOK</li> <li>● Understand the concept of “keeping the end in mind”</li> <li>● Explain the importance of the Target Product Profile (TPP), diving into the nuts and bolts of what goes into it</li> <li>● Analyze the stage gates/decision points at each stage of the drug discovery and development process, how the TPP comes into play, the environment/stakeholders, and team structure</li> </ul> <p>✓ Contains Capstone Assignment</p>	<p>6 hrs</p>
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<p><b>Section 5: Optional Courses</b></p>			
<p>Course Provider: LinkedIn Learning</p>			
<p><b>Course Name</b></p>	<p><b>Learning Objectives</b></p>	<p><b>CEU - Continuing Education Units</b></p>	<p><b>Estimated Duration</b></p>
<p><b>Rock Your LinkedIn Profile</b></p> <p>By Lauren Jolda</p>	<ul style="list-style-type: none"> <li>● Profile photo best practices</li> <li>● Creating a custom LinkedIn headline</li> <li>● Updating your industry</li> <li>● Introducing yourself in the summary section</li> <li>● Adding work experience</li> <li>● Adding skills</li> <li>● Getting endorsements</li> <li>● Requesting recommendations</li> </ul> <p>✓ Contains Chapter Quizzes &amp; Exercise Files</p> <p>✓ Skills covered: LinkedIn</p>	<p>N/A</p>	<p>1h 16m</p>

<p><b>Developing a Learning Mindset</b></p> <p>By Gary Bolles</p>	<ul style="list-style-type: none"> <li>● Identify effective motivations for learning.</li> <li>● Explain how the brain is designed for learning.</li> <li>● List factors that influence the need for lifelong learning.</li> <li>● Describe different types of skills.</li> <li>● Create inventories of what you have learned.</li> <li>✓ Contains Exam &amp; Exercise Files</li> <li>✓ Skills covered: Lifelong Learning</li> </ul>	<ul style="list-style-type: none"> <li>● National Association of State Boards of Accountancy (NASBA) <ul style="list-style-type: none"> <li>○ Continuing Professional Education Credit (CPE): 0.5</li> <li>○ Recommended NASBA Field of Study: Personal Development</li> </ul> </li> <li>● Project Management Institute (PMI)® <ul style="list-style-type: none"> <li>○ PDUs/Contact Hours: 0.5</li> </ul> </li> </ul>	<p>30m</p>
<p><b>Productivity Tips: Finding Your Productive Mindset</b></p> <p>By Dave Crenshaw</p>	<ul style="list-style-type: none"> <li>● Name one useful tip concerning low-value activities.</li> <li>● Explain how to avoid the crowd mindset.</li> <li>● Recall how a gathering point is used to handle interruptive ideas.</li> <li>● List three tips that can help you prepare for unexpected setbacks.</li> <li>● Identify techniques used to deal with negative experiences.</li> <li>✓ Contains Chapter Quiz, Exam, &amp; Exercise Files</li> <li>✓ Skills covered: Productivity Improvement</li> </ul>	<ul style="list-style-type: none"> <li>● National Association of State Boards of Accountancy (NASBA) <ul style="list-style-type: none"> <li>○ Continuing Professional Education Credit (CPE): 1.8</li> <li>○ Recommended NASBA Field of Study: Personal Development</li> </ul> </li> </ul>	<p>59m</p>
<p><b>Managing Team Conflict</b></p> <p>By Henna Inam</p>	<ul style="list-style-type: none"> <li>● Explain why conflict can be a healthy process for a group of people.</li> <li>● Describe three types of trust and how to build it among team members.</li> <li>● Summarize how ambiguity can create conflict among team members and how this conflict can be resolved.</li> <li>● Compare and contrast the assertive and cooperative styles of conflict.</li> <li>● Analyze the five types of conflict management styles and assess when it is most appropriate to use each.</li> <li>✓ Contains Chapter Quizzes, Exam, &amp; Exercise Files</li> <li>✓ Skills covered: Project Management</li> </ul>	<ul style="list-style-type: none"> <li>● National Association of State Boards of Accountancy (NASBA) <ul style="list-style-type: none"> <li>○ Continuing Professional Education Credit (CPE): 1.8</li> <li>○ Recommended NASBA Field of Study: Personnel/ Human Resources</li> </ul> </li> <li>● Project Management Institute (PMI)® <ul style="list-style-type: none"> <li>○ PDUs/Contact Hours: 1</li> </ul> </li> </ul>	<p>1h 10m</p>

<p><b>Leadership Foundations</b></p> <p>By Dr. Shirley Davis</p>	<ul style="list-style-type: none"> <li>● Leading yourself and others</li> <li>● Critical leadership competencies</li> <li>● Cultivating an inclusive work culture</li> <li>● Establishing and maintaining trust</li> <li>● Addressing difficult situations</li> <li>● Leading change through agility and resilience</li> <li>● Communicating with impact</li> <li>● Building business acumen</li> </ul> <p>✓ Contains Chapter Quizzes &amp; Exam</p> <p>✓ Skills covered: Leadership</p>	<ul style="list-style-type: none"> <li>● Project Management Institute (PMI)® <ul style="list-style-type: none"> <li>○ PDUs/Contact Hours: 0.5</li> </ul> </li> </ul>	<p>40m</p>
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