# **Knowledge & Skills Gained in York U Biology Graduate Programs**

The purpose of the checklist below is to outline the knowledge and skills you can develop during your graduate studies that can better prepare for scholarship applications, future degrees, and your science career. A graduate degree is far more than the thesis that you write!

You can also track ***how*** you developed these skills (course work, thesis research, volunteering, workshops, conferences, etc) so you can craft a stronger evidence-based CV and be better prepared for job interviews (with specific examples).

Graduate students (and postdocs) currently registered at a Canadian University can enroll in the Mitacs Training Program for professional skills development free of charge: (<https://www.mitacs.ca/en/programs/training/about-training>).

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| **Knowledge** | **How can I acquire this?** | **Tracking (Be sure to write down how you developed these skills)** |
| * Ethics in science and research | * Animal Care and Biohazards certification * York U Faculty of Graduate Studies-Research Ethics information page:   http://gradstudies.yorku.ca/current-students/thesis-dissertation/research-ethics/   * Government of Canada-The TCPS 2 Tutorial   + Course on Research Ethics (Government of Canada): http://www.pre.ethics.gc.ca/eng/education/tutorial-didacticiel/ |  |
| * Understanding the role of biology in societal issues (e.g. gene editing, climate change) | * Biology graduate courses |  |
| * Proper lab book recording | * Thesis Supervisor * Laboratory team |  |
| * Statistical data analysis methods | * Biology graduate courses * Statistical Consulting Services Short Courses on statistics and statistical computing * R workshops |  |
| * Biology – emerging literature, methodology, history of science, etc. | * Biology graduate courses * Lab meetings * Departmental Seminars |  |

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| **Skill** | **How can I acquire this?** | **Tracking (Be sure to write down how you developed these skills)** |
| * Design, conduct and interpret experimental designs and research | * Research proposal, Progress Reports, Thesis * Laboratory/field work with supervisor * Biology graduate courses |  |
| * Conduct literature review | * Research Progress Report and Thesis * Biology graduate courses |  |
| * Apply scientific approach to problems | * Research proposal * Laboratory/field work with supervisor * Biology graduate courses |  |
| * Experimental hands-on skills (i.e. sample collection, specimen observation…) | * Laboratory/field work |  |
| * Communicate scientific knowledge effectively to varied audiences in written and oral forms | * Research proposal and committee meetings * Graduate courses * 3 Minute Thesis Competition (FGS) |  |
| * Communicate scientific research using engaging and effective models, charts and graphs | * Research proposal and committee meetings * Thesis * 3 Minute Thesis Competition (FGS) |  |
| * Public speaking to a variety of audiences (i.e. seminars, conferences…) | * Departmental Seminars (as audience) * Committee meetings, Oral examination of thesis * TA Certificate in Teaching (TACT) from Teaching Commons * STAY Symposium presenter |  |
| * Business and consulting knowledge | * York Graduate Management Consulting Association Certificate in Business and Consulting (mini MBA) |  |

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| **Leadership** | **How can I acquire this?** | **Tracking (Be sure to write down how you developed these skills)** |
| * Mentoring research undergraduates (does not include normal TA duties) | * Undergraduate Mentor with Biology Society at York U * Learning Skills Peers * Club Peer Mentoring * Diversity Peer Education Team * Peer Health Education Team |  |
| * Science outreach to public | * Student Ambassadors * Let’s Talk Science |  |
| * Organizing scientific events on campus or at conferences | * Undergraduate Summer Research Conference * Annual Graduate Biology Symposium |  |
| * Executive committee of graduate student or other societies | * York U Graduate Students Association * Assoc. of Graduate Students in Biol. Sciences * Science and Technology Student’s Association |  |
| * Service on department or university committees | * Bethune College Council Member * Student Caucus on Science Faculty Council * Student Voice on Faculty Science Committee * Student representative on York University Senate * Student rep. on Biology committees |  |
| * Community leadership (non-academic) | * Student Ambassadors * Let’s Talk Science * Advocates for Physically Disabled Individuals * Frontier College * Global Youth Volunteer Network * GoEco * Habitat for Humanity * Start2Finish Reading & Running Clubs * Volunteer Toronto * Volunteer Note Taker * World Vision at YorkU |  |