Position Description Form (PDF)

College: Sir Sandford Fleming

Incumbent's Name:

Position Title: Research Technologist- CIAP

Payband: I

Position Code/Number (if applicable):

Scheduled No. of Hours____35____

Appointment Type: ____X ____ 12 months _____less than 12 months

Supervisor's Name and Title: Brett Goodwin, Vice-President, Applied Research & Innovation

Completed by: Mary Lou McLean

Date: October 9, 2020

Signatures:

Incumbent: (Indicates the incumbent has read and understood the PDF) Date:

Supervisor:

Date:

Instructions for Completing the PDF

- 1. Read the form carefully before completing any of the sections.
- 2. Answer each section as completely as you can based on the typical activities or requirements of the position and not on exceptional or rare requirements.
- 3. If you have any questions, refer to the document entitled "A Guide on How to Write Support Staff Position Description Forms" or contact your Human Resources representation for clarification.
- 4. Ensure the PDF is legible.
- 5. Responses should be straightforward and concise using simple factual statements.

Position Summary

Provide a concise description of the overall purpose of the position.

The Research Technologist plays a key role in applied research projects at the Centre for Innovative Aquaculture Production (CIAP), including installing, operating and decommissioning a wide range of experiments, technologies and analyses at the centre and in the field. The incumbent will lead and contribute to general daily husbandry for the entire facility and for all aquatic species used in research. In collaboration with the Research Scientist, the incumbent will support project requirements according to project plans, including tracking project deliverables, monitoring experiments, recording and summarizing data, performing basic statistics, writing data reports and providing Research Scientist and VP, Applied Research & Innovation with regular updates. As well, the Research Technologist will play a key role in the daily operations of the new research facility and be a key participant in its construction and maintenance, including working with external vendors, contractors and internal departments, such as Physical Resources and Purchasing.

Duties and Responsibilities

Indicate as clearly as possible the significant duties and responsibilities associated with the position. Indicate the approximate percentage of time for each duty. Describe duties rather than detailed work routines.

	Approxima % of time annually*
1. Facilities & Equipment	35%
The incumbent will assist with installing and maintaining equipment and infrastructure, undertake trouble-shooting and repair work, lead installations and builds, monitor water quality parameters associated with recirculation technology and make adjustments to optimize water quality as required. The incumbent will maintain records, recommend and perform service as required and respond to the adaptive management approach to the research and rearing of various species of fish and aquatic invertebrates	
In addition, the incumbent will adapt and modify facilities and equipment to address new projects and purchase equipment under approval of the Vice- President, Applied Research & Innovation and within set timelines. Working with the Office of Applied Research & Innovation, the Incumbent will provide equipment specifications (Request For Proposal details) required for equipment procurement or price estimates to be used for grant proposals.	
Working with Physical Resources, and external contractors the incumbent will provide guidance and expertise on the installation and set-up of new equipment and projects, as well as the decommissioning of projects and equipment.	
The incumbent will provide support for research and maintenance occurring in the Frost teaching hatchery as required.	

 2. Project work. The incumbent will assist with the implementation and monitoring of a variety of simultaneous research projects by following proper animal husbandry guidelines and in strict accordance with the regulations set out by the Canadian Council on Animal Care. In addition, the incumbent will participate with the Research Scientist in partner meetings and project planning sessions to provide feedback in relation to methodologies and modification of product studies and experimental designs. 	30%
3. Research Data & Quality control The incumbent will ensure integrity of data collected through laboratory methods and ensure it is recorded and backed up in accordance with accepted laboratory procedures. This includes verifying and reporting data anomalies and project issues in a timely and professional fashion (daily or weekly data reporting to the Research Scientist), offering insight into data which falls outside of the expected normal range and ensuring data is traceable and accessible. The incumbent will also provide summaries and initial results as required for all projects as well as tables and figures to support final reports and publications. The Research Technician will follow quality control (assurance) measures to ensure repeatability and data integrity, including the creation and maintenance of tracking systems related to fish and data, performing basic statistics and writing data reports.	15%
4. Research Centre Operations The incumbent will perform and direct daily fish culture routines as well as intermittent procedures, as required in rearing, maintaining, and monitoring healthy fish stocks to support research projects. As part of this function, the incumbent twill be responsible for the creation of standard operating procedures to ensure continuing of operations in the research hatchery. In collaboration with other CIAP staff, the incumbent will provide input on project design, logistics and overall facility production planning, on a weekly to annual timescale	10%
5. Other duties as assigned.	5%

* To help you estimate approximate percentages:
½ hour a day is 7%
½ day a week is 10%
½ day a month is 2%
1 week a year is 2%

1 hour a week is 3% 1 day a month is 4%

1. Education

A Check the box that best describes the **minimum** level of **formal** education that is required for the position and specify the field(s) of study. Do not include on-the-job training in this information.

Up to High School		1 year certificate	2 year diploma
Trade certification	х	3 year diploma / degree	4 year degree or 3 yeardiploma / degree plus professional certification

- Dest graduate degree (e.g. Masters) or 4 years degree plus professional certification
- □ Doctoral degree

Field(s) of Study:

Aquaculture, Fish & Wildlife;

B. Check the box that best describes the requirement for specific course(s), certification, qualification, formal training or accreditation in addition to and not part of the education level noted above and in the space provided specify the additional requirement(s). Include only the requirement that would typically be included in the job posting and would be acquired prior to the commencement of the position. Do not include courses that are needed to maintain a professional designation.

Х	No additional requirements	
	Additional requirements obtained by course(s) of a total of 100 hours or less	
	Additional requirements obtained by course(s) of a total between 101 and 520 hours	
	Additional requirements obtained by course(s) of a total of more than 520 hours	

2. Experience

Experience refers to the minimum time required in prior position(s) to understand how to apply the techniques, methods and practices necessary to perform this job. This experience maybe less than experience possessed by the incumbent, as it refers only to the minimum level required on the first day of work.

Check the box that best captures the typical number of year of experience, in addition to the necessary education level, required to perform the responsibilities of the position and, in the space provided, describe the type of experience. Include any experience that is part of a certification process, but only if the work experience or on-the-job training occurs after the conclusion of the educational course or program.



3. Analysis and Problem Solving

This section relates to the application of analysis and judgement within the scope of the position.

The following charts help to define the level of complexity involved in the analysis or identification of situations, information or problems, the steps taken to develop options, solutions or other actions and the judgement required to do so.

Please provide up to three (3) examples of analysis and problem solving that are regular and recurring and, if present in the position, up to two (2) examples that occur occasionally:

#1 regular & recurring			
Key issue or problem encountered.	Disease Pathogen: Fish health is deteriorating, and incumbent must respond to and effectively control emergency situation.		
How is it identified?	Observation, elevated mortalities, changes in fish behaviour, reference to previous records, microscopy		
Is further investigation required to define the situation and/or problem? If so, describe.	Elimination of causes. Further investigation may include consultation with external experts, Research Scientist, hatchery staff, pathology staff, Ministry of Natural Resources (MNR) fish culture staff.		
Explain the analysis used to determine a solution(s) for the situation and/or problem.	Incumbent uses understanding of target disease organisms (for the species) and monitoring techniques. Confirmation of the disease or condition is made in consultation with experts (pathology lab). The incumbent may determine a course of action by referring to written procedures and personal communications, expert Ministry advice from fish culture staff.		
What sources are available to assist the incumbent finding solution(s)? (eg. past practices, established standards or guidelines).	Standard Operating Procedures(SOP); Animal Use Protocols; past practices, faculty, Research Scientist, hatchery staff, operations manuals, MNR protocols		

3. Analysis and Problem Solving

Key issue or problem encountered

#2 regular & recurring

Water chemistry: Water quality parameters measure outside of acceptable tolerances.

How is it identified?	Regular measurements performed by CIAP personnel, evaluated by the incumbent, using devices – tensiononometers to monitor dissolved gas, etc.	
Is further investigation required to define the situation and/or problem? If so, describe.	Further investigation to determine the cause, and mitigation of the problem. Forward and backward problem solving to eliminate causes.	
Explain the analysis used to determine a solution(s) for the situation and/or problem.	The incumbent isolates the cause by re-testing, checking that measuring equipment is calibrated, and isolating the source of the problem– mental flow chart of "if-then" solutions. Identify supersaturated dissolved gases from well water supply. Researches, purchases, installs and tests various configurations to improve survival and growth of eggs/sac fry e.g. design and test a new degasser system.	
What sources are available to assist the incumbent finding solution(s)? (eg. past practices, established standards or guidelines).	SOP, Past Practices, Texts, Previous Records, Established Standards. Scientific studies. Specialized system configuration that may have no prototype. Consults with the Research Scientist, external specialists and supervisor (VP) as required, for confirmation of results and	
action to be taken.		
	#3 regular & recurring	
Key issue or problem encountered	#3 regular & recurring Mechanical systems: Specialized aspects of rearing various research species requires constant monitoring and adjustment of mechanical systems and water chemistry analysis.	
Key issue or problem encountered How is it identified?	Mechanical systems: Specialized aspects of rearing various research species requires constant monitoring and adjustment of mechanical systems and water chemistry	
	Mechanical systems: Specialized aspects of rearing various research species requires constant monitoring and adjustment of mechanical systems and water chemistry analysis. Water chemistry analysis, increased mortalities, failure to convert from egg to sac fry to swim up life stage. Sensitivity to water chemistry during the early rearing processes (incubation to sac fry stage) is highly variable and can require	

4. Planning/Coordinating

Planning is a proactive activity as the incumbent must develop in advance a method of acting or proceeding, while coordinating can be more reactive in nature.

Using the following charts, provide up to three (3) examples of planning and/or coordinating that are regular and recurring and, if present in the position, up to two (2) examples that occur occasionally:

	#1 regular & recurring
List the project and the role of the incumbent in this activity.	Oversee the continuous operation and functionality of all mechanical systems, back-up, and alarm systems
What are the organizational and/or project management skills needed to bring together and integrate this activity?	The incumbent must devise and maintain a process of monitoring, testing regular maintenance, and servicing of existing mechanical systems and pumps in a complex recirculating hatchery with very narrow water chemistry parameters. This involves monitoring and maintaining ultraviolet sterilizer systems and valve manipulation -as well as record keeping, producing updated record systems (computer –based), communicating with service personnel via phone and email.
List the types of resources required to complete this task, project or activity.	SOPs, Animal Use Protocols, past practices, records, service manuals, industry contacts
How is/are deadline(s) determined?	Deadlines are determined by observing service dates, regular test dates, and immediacy of repairs required by in-house or outside service personnel.
Who determines if changes to the project or activity are required? And who determines whether these changes have an impact on others? Please provide concrete examples.	Changes are made in consultation with the Research Scientist and the Physical Resources Department.

4. Planning/Coordinating

	#2 regular & recurring		
List the project and the role of the incumbent in this activity.	Plan and lead experimental activities in consultation with the Research Scientist.		
What are the organizational and/or project management skills needed to bring together and integrate this activity?	Incumbent must maintain CIAP centre records of research experiments and lead activities associated with running of the experiment as outlined in the project plans, experimental plans, SOPs developed in coordination with the Research Scientist. Coordination will involve collaborating with other CIAP staff to carry out the requirements stated in these documents, making sure they are completed on time and completed correctly. The incumbent will also be responsible for data review and entry, development of final data reports, and at times communicating results with clients.		
List the types of resources required to complete this task, project or activity.	CIAP manuals, experimental handbooks, science journals, internet sources, as well as Fleming personnel		
How is/are deadline(s) determined?	Deadlines are determined by project agreements and in consultation with the Research Scientist, industry partners and project collaborators.		
Who determines if changes to the projector activity are required? And who determines whether these changes have an impact on others? Please provide concrete examples.	The incumbent, in collaboration with the Research Scientist will determine if these changes are required and if they impact other areas, which could include changing of the project plan or informing partners of delays.		
#3 regular & recurring			
List the project and the role of the incumbent in this activity.	Responsible for inventory control in the CIAP.		
What are the organizational and/or project management skills needed to bring together and integrate this activity?	The incumbent will need to be able to proactively evaluate and monitor the amount of supplies required for current research and be able to forecast for coming projects. The incumbent will need to work with other CIAP staff to collaborate on purchasing, and stocking of supplies.		
List the types of resources required to complete this task, project or activity.	Inventory control spreadsheets will be used as a resource and will be used to keep inventory up to date. As well, the incumbent will access supplier websites for pricing.		

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How is/are deadline(s) determined?	For projects, deadlines are determined in collaboration with the Research Scientist and other CIAP staff. Other deadlines for orders can be determined based on urgency of need to meet research requirements.
Who determines if changes to the projector	If supplies are not available, the incumbent would discuss
activity are required? And who determines	with the Research Scientist and as soon as possible who
whether these changes have an impact on	will evaluate options and determine if it will have an effect
others? Please provide concrete examples.	on project out comes.

4. Planning/Coordinating	
	#1 occasional (if none, please strike out this section)
List the project and the role of the incumbent in this activity.	The incumbent will be responsible for planning and coordinating research work that takes place in the field at partner locations. This will involve planning all logistics, including travel, accommodations, vehicle rental, staffing, equipment and supplies needed.
What are the organizational and/or project management skills needed to bring together and integrate this activity?	The incumbent will need to be able to proactively evaluate the amount of resources required for the field work in terms of time, people, equipment and supplies and plan well ahead of the trip to ensure nothing is missed. The ability to proactively schedule and order what is needed for the trip and to ensure the safe transport of people and supplies is essential.
List the types of resources required to complete this task, project or activity.	Project plans, websites, vendor supply lists, Excel
How is/are deadline(s) determined?	Determined by the deliverables set out in the project plan
Who determines if changes to the projector activity are required? And who determines whether these changes have an impact on others? Please provide concrete examples.	This is determined by the incumbent in collaboration with the Research Scientist and the industry partner. For example, if a 3-day sampling trip is interrupted due to poor weather, a decision would need to be made whether enough data was collected or if an extra day should be added to the trip. The incumbent would have good knowledge of whether the data collected was sufficient for the research.

5. Guiding/Advising Others

This section describes the **assigned responsibility** of the position to guide or advise others (e.g. other employees, students). Focus on the actions taken (rather than the communication skills) that directly assist others in the performance of their work or skill development.

Though Support Staff cannot formally "supervise" others, there may be a requirement to guide others using the incumbent's job expertise. This is beyond being helpful and providing ad hoc advice. It must be an assigned responsibility and must assist or enable others to be able to complete their own tasks.

Check the box(es) that best describe the level of responsibility assigned to the position and provide an example(s) to support the selection, including the positions that the incumbent guides or advises.

Regular & Recurring	Occasional	Level	Example
Х		Minimal requirement to guide/advise others. The incumbent may be required to explain procedures to other employees or students.	Incumbent will be required to explain hatchery procedures to student workers, new lab technicians and others that may be using the CIAP facilities.
Х		There is a need for the incumbent to demonstrate correct processes/	Demonstrates safe and proper use of hatchery equipment.
		procedures to others so that they can complete specific tasks.	Provides training on installations and decommissions
	Х	The incumbent recommends a course of action or makes decisions so that others can perform their day-to-day activities.	Reviews and develops safety protocols prior to the start of a project relating but not limited to sample collection and technology operations.
			Coordinates the efforts of project team members(students and technicians), monitoring tasks and ensuring project stays on schedule. Utilizes expertise to assist technicians and other staff by designing procedures, protocols and methods and recommend the best course of action for others.
		The incumbent is an active participant and has ongoing involvement in the progress of others with whom he/she has the responsibility to demonstrate correct processes/procedures or provide direction.	

The incumbent is responsible for	
allocating tasks to others and	
recommending a course of action or	
making necessary decisions to	
ensure the tasks are completed.	
	L

6. Independence of Action

Please illustrate the type of independence or autonomy exercised in the position. Consideration is to be given to the degree of freedom and constraints that define the parameters in which the incumbent works.

What are the instructions that are typically required or provided at the beginning of a work assignment?					
Regular and RecurringOccasional (if none, please strike out this section)Discussion of short and long term project goals. Overall definition of short an intermediate term production targets such as expected survival rates, growth rates.Adjustments of techniques, adaptation of processes, refinement of methods					
What rules, procedures, past practices or guidelines are available to guide the incumbent?					
Regular and RecurringOccasional (if none, please strike out this section)Past practices, historical data, hatchery technologist, industry expertsRaising certain research species is part of a species restoration program that has evolved from DNA research to reintroduce an extirpated species when new strains are developed (by MNR), the process of successfully raising the species through the incubation stage and beyond is trial and error for which there is no precedent for this species.					

How is work reviewed or verified (eg. feedback from others, work processes, Supervisor)?				
Regular and Recurring Occasional (if none, please strike out this section)				
Feedback from Research Scientist, industry partners and other CIAP staff				

6. Independence of Action

Describe the type of decisions the incumbent will make in consultation with someone else other than the Supervisor?			
Regular and Recurring	Occasional (if none, please strike out this section)		

Equipping research centre as needed for project work and maintenance of facilities will require ordering appropriate equipment and supplies – requiring decisions and extensive consultation with other supply companies, and outside labs. Other examples include consulting Fleming personnel in other departments concerning routine operational matters and making appropriate decisions (e.g.	
other departments concerning routine operational matters and making appropriate decisions (e.g. making decisions as needed for IT needs or requesting something from facilities, etc.)	

Describe the type of decisions that would be decided in consultation with the Supervisor.				
Regular and Recurring	Occasional (if none, please strike out this section)			
Permission to access funds for items not specifically part of the approved budget (e.g. major repairs or purchase of capital equipment).	Situations where incumbent feels faculty or student demands may infringe on policies or rules of College.			
All health and safety as well as security issues requiring managerial attention or intervention.				

Regular and Recurring	Occasional (if none, please strike out this section
CIAP operational daily methods, fish culture daily operations, scheduling and training student workers.	
Research methodologies and adapt existing instrumentation to perform required analysis.	
Finding efficiencies in routine CIAP operations.	
Implementing installation and decommissioning of projects (technologies, experiments)	
Analysis of samples as needed to ensure data assurance and integrity	

7. Service Delivery

This section looks at the service relationship that is an assigned requirement of the position. It considers the required manner in which the position delivers service to customers. It is not intended to examine the incumbent's interpersonal relationship with those customers and the normal anticipation of what customers want and then supplying it efficiently. It considers how the request for service is received and the degree to which the position is required to design and fulfil the service requirement. A "customer" is defined in the broadest sense as a person or groups of people and can be internal or external to the College.

In the table below, list the key service(s) and its associated customers. Describe how the request for service is received by the incumbent, how the service is carried out and the frequency.

Information on the service		Customer	Frequency	
How is it received?	How is it carried out?		(D, W, M. I)*	
Conducting tours, demonstrating related CIAP activities during tours, demonstrating techniques	Personal contact, tours	Students, faculty, general public, industry partners, funders.	Μ	
New experiment/protocol required	Develop a new experiment/protocol to meet customer needs	Industry partners	М	
To install / decommission a new technologyor piece of equipment	Develop and research existing installations to gather information necessaryfor the planning and implementation of designs	CIAP staff industry partners.	М	
To provide quality research data	Develop and follow quality control (assurance) measuresto ensure repeatability and data integrity, including recording and summarizing data, performing basic statistics and writing data reports.	CIAP staff and industry partners	D	

* D = Daily W = Weekly M = Monthly I = Infrequently

8. Communication

In the table below indicate the type of communication skills required to deal effectively with others. Be sure to list both verbal (e.g. exchanging information, formal presentations) and written (e.g. initiate memos, reports, proposals) in the section(s) that best describes the method of communication.

Communication Skill/Method	Example	Audience	Frequency (D, W, M ,I)*
Exchanging routine information, extending common courtesy	General Updates and information relating to general fish health and husbandry issues (feeding, cleaning, mechanical operation, water quality monitoring, disease testing)	CIAP staff and industry partners	D
Explanation and interpretation of information or ideas	Relating to raising various fish species in a re-circulating hatchery environment; demonstrating techniquessuch as water quality testing (e.g. using DO meter, PH meter)	Suppliers, students, CIAP staff	W
Imparting technical information and advice	Demonstrates Safe and proper use of hatchery equipment	CIAP staff and students	D
	Explains research experiment results and progress to non-technical individuals	Students and industry partners	W
Instructing or training	Provides training sessions on installation and decommissioning of equipment, and health and safety protocols.	CIAP staff and students	W
Obtaining cooperation or consent			

D = Daily

W = Weekly

M = Monthly I = Infrequently

9. Physical Effort

In the tables below, describe the type of physical activity that is required on a regular basis. Please indicate the activity as well as the frequency, the average duration of each activity and whether there is the ability to reduce any strain by changing positions or performing another activity. Activities to be considered are sitting, standing, walking, climbing, crouching, lifting and/or carrying light, medium or heavy objects, pushing, pulling, working in an awkward position or maintaining one position for a long period.

Physical Activity	Frequency (D, W, M, I)*	Duration			Ability to reduce strain		
		< 1 hr at a time	1 - 2 hrs at a time	> 2 hrs at a time	Yes	No	N/A
Standing	D			D		Х	
Lifting feed bags (medium)	D	D		 		Х	
Lifting oxygen tanks (heavy)	М	М				Х	
Setting up / lifting equipment and instruments	W	W				Х	
Driving watercraft, motor vehicles	М			М	Х		

* D = Daily W = Weekly M = Monthly I = Infrequently

If lifting is required, please indicate the weights below and provide examples.

- X Light (up to 5 kg or 11 lbs)
- X Medium (between 5 to 20 kg or 11 to 44 lbs)
- X Heavy (over 20 kg or 44 lbs)

Feed containers, pumps, equipment

Feed bags

Oxygen tanks

10. Audio Visual Effort

Describe the degree of attention or focus required to perform tasks taking into consideration:

- the audio/visual effort and the focus or concentration needed to perform a task and the duration of the task, including breaks (eg. up to 2 hours at one time including scheduled breaks)
- impact on attention or focus due to changes to deadlines or priorities
- the need for the incumbent to switch attention between tasks (eg. multi-tasking where each task requires focus or concentration)
- whether the level of concentration can be maintained throughout the task or is broken due to the number of disruptions

Provide up to three (3) examples of activities that require a higher than usual need for focus and concentration.

Activity #1	Frequency	Average Duration				
	(D, W, M, I)*	Short < 30 mins	Long up to 2 hrs	Ex tended > 2 hrs		
Observing fish behaviour/marking	D	Х				
Can concentration or focus be maintained throughout the duration of the activity? If not, why? X Usually □ No There are occasional interruptions from staff.						

Activity #2	Frequency	Average Duration			
	(D, W, M, I)*	Short < 30 mins	Long up to 2 hrs	Ex tended > 2 hrs	
Water quality tests	D	Х			
Can concentration or focus be maintained throughout the duration of the activity? If not, why? X Usually □ No					

Activity #3	Frequency (D, W, M, I)*	Average Duration		
		Short < 30 mins	Long up to 2 hrs	Ex tended > 2 hrs
Working on computers requires higher than usual need for focus and concentration when completing complex and highly analytical data analysis, calculations and reconciliations.	W		X	

Car	n concentration or focus be maintained throughout the duration of the activity? If not, why?
	Usually
	No

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11. Working Environment

Please check the appropriate box(es) that best describes the work environment and the corresponding frequency and provide an example of the condition.

Working Conditions	Examples	Frequency (D, W, M, I)*
acceptable working conditions (minimal exposure to the conditions listed below)		
X accessing crawl spaces/confined spaces	Below ground filter tanks, tight spaces in mechanical room	D
dealing with abusive people		
dealing with abusive people who pose a threat of physical harm		
X difficult weather conditions	Occasional need to work in wet, snow or cold temperatures to perform field procedures	1
X exposure to very high or low temperatures (e.g. freezers)	 Unheated or cooled hatchery Heated rearing space resulting in high humidity levels 	
X handling hazardous substances	Formaldehyde, anaesthetics, pharmaceuticals, chemicals	D
X smelly, dirty or noisy environment	Noisy, damp, cold conditions	W
X travel	To field locations locally and in remote, driving rental vehicle including watercraft	М
		W
□ other (explain)		
* D = Daily M = Monthly W = Weekly	I = Infrequently	L