

**NOTES**

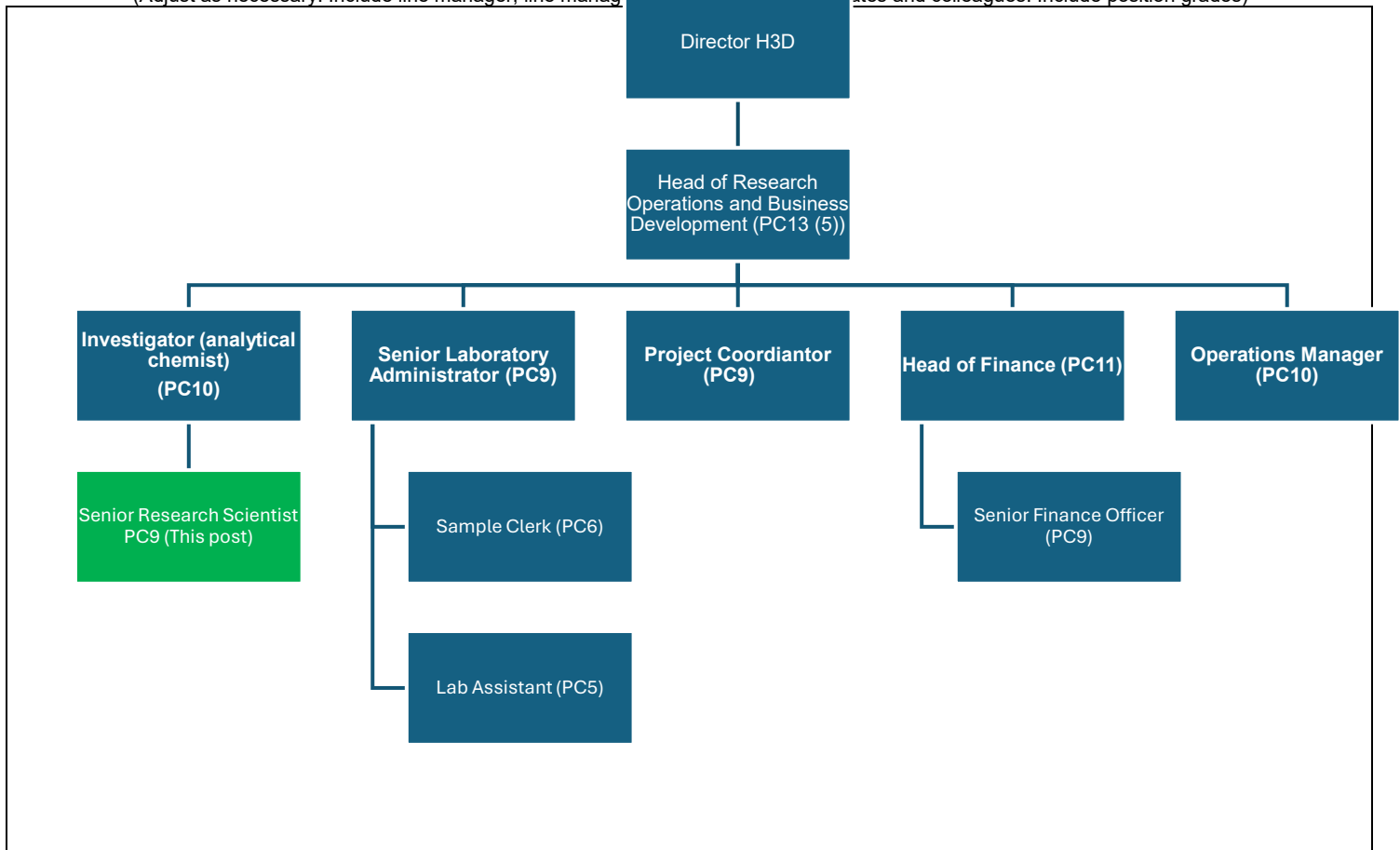
- Forms must be downloaded from the UCT website: <https://forms.uct.ac.za/forms.htm>
- This form serves as a template for the writing of position descriptions.
- A copy of this form is kept by the line manager and the position holder.

**POSITION DETAILS**

|  |  |                             |          |
|--|--|-----------------------------|----------|
| Position title                             | Senior Research Scientist Analytical Chemist |                             |          |
| Job title (HR Business Partner to provide) |  |                             |          |
| Position grade (if known)                  | PC9  | Date last graded (if known) | Oct 2016 |
| Academic faculty / PASS department         | Science Faculty                              |                             |          |
| Academic department / PASS unit            | H3D  |                             |          |
| Division / section                         | Ops and PM                                   |                             |          |
| Date of compilation                        | Oct 2025                                     |                             |          |

**ORGANOGRAM**

(Adjust as necessary. Include line manager, line manager's name, position grade and colleagues. Include position grades)



## PURPOSE

The main purpose of this position is to provide scientific, technical and organizational support to an interdisciplinary translational research team discovering and developing innovative, lifesaving medicines.

Accountabilities and responsibilities of the Senior Research Scientist include:

### Scientific & Research Impact

- Conduct a variety of tasks in a drug discovery laboratory requiring specific scientific or technical knowledge and laboratory techniques with regular input from supervisor
- Perform routine data generation and routine laboratory activities in support of drug discovery projects/programs
- Address concerns and issues with data generation as they arise and assist with trouble-shooting if issues are identified, including optimization of assays
- Proactively identify areas of improvement in the laboratory and raise these with supervisor
- Provide basic data analysis and assistance in design of follow-on experiments
- Document own experiments in accordance with H3D lab notebook policies (including tables, graphs, etc.)
- Periodically present results to supervisor and/or drug discovery team
- Manage lab space and equipment, including the maintenance, calibration and validation of laboratory equipment at H3D and, where applicable, at UCT
- Work collaboratively with all team and lab members; provide technical assistance and share technical know-how with technical community at H3D and UCT as needed
- Actively participate in lab and team meetings as needed

### Scientific/Technical & Operational Know-how

- Demonstrate ability to apply technical knowledge to complete work assignments and an understanding of modern techniques, instrumentation and underlying principles
- Help academic labs at UCT use drug discovery-related technologies and equipment where appropriate
- Perform duties with appropriate knowledge of relevant laboratory tools and procedures
- Propose ideas for and implement H3D-wide technology or research operations projects
- Demonstrate a working knowledge of relevant research policies, guidelines and procedures; assist in the preparation of SOPs for H3D, where appropriate; complete compliance training as required
- Operate and perform routine maintenance on instruments at H3D (and UCT as needed); identify and report unsafe equipment, conditions and practices so that they may be corrected prior to an incident

### Decision Making

- Provide assistance in design of follow-on experiments and method development and recommend use of alternative technologies or experimental protocols as needed
- Conduct analysis and organize data and seek regular input from supervisor as needed
- Demonstrate a clear understanding of how own experiments fit into overall project goals and organize day-to-day work accordingly

### Desired Behaviors

Apply H3D Values & Behaviors with a specific focus on:

- Proactively share technical expertise and ideas for improvements with other members of the team/laboratory and contribute your ideas to problem-solving on an ongoing basis; encourage other technical staff to do the same
- Interact with others in a positive, collaborative manner and help resolve conflicts in a constructive manner; encourage others to do the same
- Support H3D mission and leadership decisions and prioritize own tasks in support of these decisions and towards accomplishing research goals

**CONTENT**

| <b>Key performance areas</b> |                    | <b>% of time spent</b> | <b>Inputs</b><br>(Responsibilities / activities / processes/ methods used)   | <b>Outputs</b><br>(Expected results)   |
|------------------------------|--------------------|------------------------|--|--|
| 1                            | Scientific support | 60%                    | <ul style="list-style-type: none"> <li>Independent method development for the analysis and purification of challenging samples using instrumentation including LCMS, UHPLC, Prep HPLC and Flash HPLC in support of the scientific projects</li> <li>Implementation/application/validation of novel assays</li> <li>Proactively provide insights, recommendations and scientific interpretation for all data generated</li> <li>Quality control of data produced</li> <li>Routine generation of data</li> <li>Chromatography instrumentation innovation and workflow optimisation</li> <li>Prepare mobile phases and ensure they're topped up at all times</li> <li>Stability testing of liquid chemical stock solutions and solid samples as requested by sample management and clients.</li> <li>Submission of NMR and MS samples for African collaborator labs working with H3D</li> </ul> | <ul style="list-style-type: none"> <li>Provide additional methods or/and method development strategies for challenging purifications and LCMS analysis based on compound properties.</li> <li>To ensure the accurate and timely purification of produced compounds</li> <li>To ensure proper interpretation of data when considering limitations of methods</li> <li>Quality of data monitored and stored</li> <li>To ensure the accurate and timely analysis of all intermediates and compounds</li> <li>Optimize instrument to improve throughput, sensitivity or/and additional capabilities</li> <li>To have sufficient solvent for analysis</li> <li>Quality control of samples</li> <li>Stability testing of internal samples and collaborator samples</li> <li>Support for analytical studies for samples from collaborator labs</li> </ul> |

|   |   |     |   |   |
|---|---|-----|---|---|
| 2 | <ul style="list-style-type: none"> <li>Technical Support</li> </ul>                     | 20% | <ul style="list-style-type: none"> <li>Support manager with trouble-shooting technical problems and routine processes</li> <li>Provide technical support to H3D scientists</li> <li>Overseeing operation of technical equipment</li> <li>Identify and report unsafe equipment, conditions and practices so that they may be corrected prior to an incident (e.g. equipment electrical issues that can affect instruments, especially related to load-shedding, connection to the generator and circuit overload).</li> <li>Ensure that all instruments are correctly used and properly shut down at the end the day</li> <li>Troubleshoot problems and liaise for servicing and repair of chemistry instruments such as LCMS, UHPLC, flash and preparative chromatography systems, balances, freeze dryer, genevac, pumps, rotary evaporator, vacuum oven, microwave reactor, UPS, chillers, thermostat, Milli Q water dispenser, flow reactor</li> <li>Support manager with maintenance of analytical chromatography instrumentation (LCMS, UHPLC, PREP HPLC and Flash) such as fixing leaks, column changes, dealing with blockages in the system and other general issues</li> <li>Maintenance of other instrumentation (balances, freeze dryer, genevac, pumps, rotary evaporator, vacuum oven, microwave reactor, chillers, thermostat, Milli Q water dispenser, flow reactor) such as changing oil/fluid, tubing, fittings, seals, filters etc.</li> <li>Break vacuum and clean the MS source when contaminated</li> <li>Discuss with supervisor and other H3D scientists regarding more difficult instrument issues – when needed liaise with engineers</li> </ul> | <ul style="list-style-type: none"> <li>Controls and calibrations performed</li> <li>Resolution of technical issues</li> <li>Provision of technical support</li> <li>To prevent instruments from being damaged from abrupt shutdowns caused by loadshedding or power fluctuations that could damage components of the instruments.</li> <li>To ensure the least down-time for all instruments.</li> <li>To ensure problems are dealt with as soon as they arise so they don't escalate</li> <li>To ensure results obtained are always reliable</li> <li>To keep track of spare parts in stock onsite</li> <li>Discussion with other H3D TOs with more experience will ensure that engineers only get called out when necessary.</li> </ul> |
| 3 | <ul style="list-style-type: none"> <li>Training and professional development</li> </ul> | 10% | <ul style="list-style-type: none"> <li>Attending seminars, workshops, training courses etc.</li> <li>Support manager with onboarding and training new staff, students and visiting researchers</li> </ul>   | <ul style="list-style-type: none"> <li>To ensure that the instruments are used correctly by all users</li> <li>Training/workshops/course/seminars attended</li> </ul>   |

|   |                        |     |   |  |
|---|------------------------|-----|---|--|
| 4 | Organizational Support | 10% | <ul style="list-style-type: none"> <li>• Order and maintain list of spares for H3D chemistry instrumentation</li> <li>• Management of the H3D asset register</li> <li>• Management of laboratory or laboratory space</li> <li>• Laboratory housekeeping (keeping workspace clean and safety compliant, stock-take, stock control etc.)</li> <li>• Prepare SOP's for relevant equipment and processes</li> <li>• Liaising with suppliers for consumables and spare parts</li> <li>• Liaising with suppliers and technical engineers for lab and instrument maintenance</li> <li>• Participate in committees (recruitment or operations committee)</li> <li>• Actively participate in H3D org structures (full team meetings, OPSCOM, transformation committee, RMT or lab meetings).</li> <li>• Organisational responsibilities: Engage with management, chemists, health and safety team and UCT maintenance team with regards to issues of lab management related to equipment responsibility and equipment management.</li> <li>• Engage with the matrix structure by managing and taking authority for the oversight of the purification platform -horizontal cross-cutting functional area</li> </ul> | <ul style="list-style-type: none"> <li>• Keep the laboratories and laboratory support services fully operational</li> <li>• Lab housekeeping conducted in accordance with H3D and UCT guidelines</li> <li>• 100% safety record</li> <li>• Lab fully operational with consumables and required spare parts for equipment</li> <li>• Participation in relevant committees</li> <li>• Write motivations for purchasing equipment</li> <li>• Management of the analytical and purification platform, so that maintenance schedules are prioritized and backlog of samples are eliminated.</li> </ul> |
|---|------------------------|-----|---|--|

### MINIMUM REQUIREMENTS

|   |  |       |                                       |       |
|---|--|-------|---------------------------------------|-------|
| Minimum qualifications  | BTech Analytical Chemistry   |       |                                       |       |
| Minimum experience (type and years)   | 2+ years relevant laboratory experience  |       |                                       |       |
| Skills  | Hands on experience with LCMS and HPLC method development and troubleshooting                          |       |                                       |       |
| Knowledge   | Solid understanding of chromatography and standard chemistry analytical techniques                     |       |                                       |       |
| Professional registration or license requirements   | N/A  |       |                                       |       |
| Other requirements (If the position requires the handling of cash or finances, other requirements must include 'Ability to handle cash or finances'.) |  |       |                                       |       |
| Competencies (Refer to <a href="#">UCT Competency Framework</a> )   | Competence   | Level | Competence                            | Level |
|   | Good oral and written communication  | 2     | Analytical thinking / Problem solving | 2     |
|   | Basic technical background in the use of drug discovery technologies and related laboratory techniques | 2     | Professional knowledge and skill      | 2     |
|   | Good interpersonal skills  | 2     |                                       |       |
|   | Teamwork/collaboration   | 2     |                                       |       |

### SCOPE OF RESPONSIBILITY

|  |  |
|--|--|
| Functions responsible for                | Managing equipment in the chemistry laboratories, LCMS method development and purification of samples.                                     |
| Amount and kind of supervision received  | Technical training in systems and daily-weekly oversight and supervision by manager  |
| Amount and kind of supervision exercised | No direct supervision, but responsible for training of new staff, students and visiting researchers in the correct use of instrumentation. |
| Decisions which can be made              | Assay and sample prioritization; assay pass/fail criteria  |
| Decisions which must be referred         | Operational (team leave allocation; supply purchasing); Financial and Scientific (SOP deviations and adjustments)                          |

### CONTACTS AND RELATIONSHIPS

|                 |   |
|-----------------|---|
| Internal to UCT | Chemistry staff, support staff and chemistry students |
| External to UCT | Suppliers, technicians and vendors                    |