



HUMGEN GUIDE FOR DUMMIES

(useful tips)



HUMGEN: A GUIDE FOR ALL LEVELS

Booklet developed by the Div. of Human Genetics Transformation Forum (Prof C Dandara, Dr S Dalvie, Dr KL Mpye, Ms H Engelbrecht, Ms G Benefield, Ms N Laing, Ms K Lebeko, Dr E Chimusa)

A. WELCOME TO DIVISION OF HUMAN GENETICS (HUMGEN), UCT MEDICAL SCHOOL

It is a great pleasure to welcome you to the Division of Human Genetics at the University of Cape Town. I hope that you will find your presence here enjoyable, productive and your contribution valued.

Human Genetics (HumGen) is an Academic and Clinical Division in the Department of Pathology (linked also to Department of Medicine). The Division was formed in 1972 and grew to present day to 20 staff members and at least 50 students. The Division provides cytogenetics services, teaching to MBChB students, supervision of postgraduate students (*Hons, MSc/MMed, Registrars and PhD*). The Division hosts several Postdoctoral Research Fellows, NRF interns, visiting students and academics. In addition, the Division is home to Academic (Lectures to Professors), and Non-Academic Staff (Scientific Officers to Research Officers), complimented by Administrative Staff Members.

The Division faces a challenge in the induction and integration of newcomers where the Division wants to maintain certain standards and ways of performing while at the same time valuing the experiences of newcomers. We recognise that newcomers bring us opportunities to innovate, transform and constantly renewing the ethos our Division.

This booklet outlines for you what we are, what we expect from you and possible challenges you may face. If you have suggestions or comments, it would be a great pleasure to hear them. You can email me at: collet.dandara@uct.ac.za; or heidi.paulse@uct.ac.za

Thank you!!!

Professor Collet Dandara

VISITOR (including Exchange students)

We welcome you warmly to the Division of Human Genetics. We hope you will have a productive stay with us. Below are just a few things to make your stay comfortable;

- Before taking that trip to Cape Town to be with us, we are hopeful that you have already made arrangements with someone (especially PIs) in the Division to officially host you
- Once you have arrived, your host will show you around or you will be shown to the HumGen member responsible for orienting new people
- If your stay is longer than one month, we recommend that you are given an access card (we call these, third party access). It has your details and allows you access to certain pre-determined areas. Please carry your Access card with you all the time.
- It is advisable to have already discussed your plan of work or stay before arrival so that you can quickly benefit from your stay
- For any resources in the lab, please liaise with your host who will make these available as arranged between the two of you
- You are invited to attend all Divisional seminars, and institute seminars
- For visiting students, you can attend some of the lectures that are given by Division lecturers
- If time allows you may be given an opportunity to present your
- We welcome criticism in the way we operate. This helps us to improve.
- Cape Town is a beautiful city, in between your busy schedule, please take time to visit some of our iconic places including Table Mountain, Kirstenbosch botanical gardens, The V&A Waterfront, and Robben Island.

ADMIN STAFF

- If you are from the “outside”, you need to go to the Orientation to UCT for staff course as this will give you an overview of the University and where you fit in.
- Speak to other staff members and find out which courses are a must do e.g. Developmental dialogues, Medical aid etc.
- You are here to perform a function, but UCT also gives you the opportunity to upgrade your skills. The opportunities are there and the onus is on **you** to get involved in this vibrant community!
- And if you from the” inside”, you probably know everything anyway, but we welcome your positive energy and experience and would love to learn from you.

B. GENERAL CONSIDERATIONS FOR EVERYBODY

Security and Personal Safety

- **Crime is a problem** everywhere in the country with some areas more affected than others. Good planning for personal safety is identifying and avoiding as many risks as possible.
- **Make photocopies** of your important documents such as passport, driver’s license, medical Aid, for reference in the event of losing the originals
- **Have written down contact numbers** of people to phone in cases of emergency including the HumGen administrative suite and Principal investigator.
- **If using public transport**, it is advisable to board when there are other passengers
- Cape Town is a modern city which is well serviced by Uber and metered taxis

Emergency Numbers

➤	<i>Emergency Service</i>	<i>Telephone</i>
➤	UCT Campus Security	021 650 2222/2121
➤	Medical Emergency	10111
➤	Ambulance service	10111
➤	Police	10111

**The number 10111 can be dialled to reach most emergency services (medical, fire and police - from any phone). Calls are free*

Office and lab locations

The Human Genetics Administration office is located in Werner Beit North, Level 3, Room N3.14, Faculty of Health Sciences (Medical School), Anzio Road Observatory. Telephone, 021 406 6995/7. We have laboratories on the same level as well as on level 4 Falmouth building through entrance three. Falmouth houses the clinical team, Pharmacogenomics Research Group and additional student offices/sitting spaces.

Accommodation

Accommodation in Cape Town is expensive and scarce. If possible, one needs to organise short-term accommodation in the first instance to allow one space and time to find longer term accommodation in an area of interest. Alternatively, one may use friends and relatives to sort out accommodation on their behalf. Accommodation arrangements and costs remains each individual's responsibility. Accommodation can include short-term (*in hotels or guest houses*), renting (*private*) and UCT student or staff accommodation. UCT accommodation is difficult to find, and it must be arranged long in advance.

Organisation

The Division of Human Genetics is headed by a Head of Division (HoDiv). It is part of the Department of Pathology, in the Faculty of Health Sciences. The Division operates through an Executive Committee and an active Division transformation forum.

Your first Day

You will be met by your Principal Investigator, Program Coordinator or delegated person who will either introduce you to the Division members or send you to the delegated person who oversees introduction of newcomers.

Office Hours

The following core hours are applicable to most people in HumGen: Monday to Friday 08:00 - 13:00 and 14:00- 17:00

Identity /Access Cards

It is a University of Cape Town requirement, that all students, staff and visitors register and get an Access card. This process will be facilitated by the HumGen Admin in consultation with Faculty and University authorities. In order to register for an access card, a newcomer should have their ID ready. You need to carry your Access card everywhere on this campus. There are many people who come and go, so don't be offended if someone asks to see your ID.

Dress Code: The dress code for all offices is smart casual.

- Respect each student as an adult even if their performance is below expectation, refrain from personal attacks and concentrate on professional issues
- Discuss authorship early and freely with students.
- Although it is the responsibility of the student to sort their funding, supervisor should assist where ever they can
- Desist from any unprofessional relationship with a student. In most cases, it can only end badly.
- If you are uncomfortable meeting one-on one with a particular student, include a co-supervisor or another student in your meetings
- Refer issues of healthy etc, that are beyond your competency to relevant bodies (*e.g. student health*)
- Give postdocs opportunity to do some of your teaching and admin, as part of their experiential learning (*You need however, to come to some agreement*).
- Be available not only to your direct students, but to all students who may want to meet and discuss their issues with you.

PRINCIPAL INVESTIGATORS (PI)

It is not easy to be a PI, there are lots of expectations from your students, administrative staff, your line-manager and (if married) your family. One needs to balance all this, and still remain sane. Some of challenges include clinical load, the number of students you supervise, grants that you hold and are accountable to, publications with students and attendance and invitations to conferences

- Now that you have made it, you have a PhD and now have a tenured position, you need to deliver
- Desist from taking too many administrative positions as this will compete with time to meet with your students
- Apply vigorously for research grants, as this is what enables the recruitment of students and offering of quality projects
- Concentrate on a particular area of research and do it well (establish your name).
- Recruit postgraduate students (*make sure that you recruit across the racial divide and take transformation into your mind*)
- For MSc students, you may give project ideas, however, at PhD level, look for students who come with ideas which fit your research focus area.
- The demographics of students has changed, you no longer get only those students who are from rich backgrounds, ask your students their financial positions and assists them to get additional funding wherever possible.
- Sign an agreement on how you supervise each student and bring it up should you feel there are problems
- Make time available to meet with each student regularly (*as agreed*) and also afford each student, opportunities to present in front of peers
- Give feedback to student at the shortest possible time
- Make every effort to support student attendance of conferences (where a student has data to present)
- Agree with students on their overall timeline to complete their degree
- Ensure that each student is trained in the art of writing a manuscript from MSc and a MUST at PhD level
- Find a suitable co-supervisor for each student who compliments your supervisory skills

C. SPECIFIC CONSIDERATION FOR DIFFERENT CATEGORIES

- **HONOURS**
- **MASTER OF PHILOSOPHY/ MASTER OF SCIENCE (MSC)**
- **MMED / REGISTRAR**
- **DOCTOR OF PHILOSOPHY (PHD)**
- **POSTDOCTORAL RESEARCH FELLOW**
- **PRINCIPAL INVESTIGATOR (PI)**
- **NRF INTERN**
- **SCIENTIFIC OFFICER**
- **ADMIN**
- **VISITOR (*including Exchange students*)**

HONOURS

Honours students in the Division of Human Genetics are important members of the group – however, arriving in the Division can be intimidating as there are many new people, rules, and procedures with which students must become familiar. The honours year is akin to a feeder school, in that researcher's hope that honours students will continue to pursue their studies beyond their Honours degree within the Division. Below are two lists describing the academic expectations of each honours student, and latterly the social interaction expectations.

Academic Expectations:

1. Time management:

Beginning the Honours programme with course modules and the first parts of lab work can be exhausting and stressful, as Honours is a particularly busy academic year. It is the role of the student to try and plan their time as best as possible, and to speak to his/her course convenor/supervisory team if he/she feels as if they are falling behind or academically at risk.

2. Effort and Perseverance

Honours students are not about “spoon-fed” information. Students are expected to play an active part in making this year of their education a worthwhile one by working hard, and learning to persevere, despite the work being difficult or time-consuming.

3. Ask Questions

Honours students are not expected to know all the theory and practical components of genetics as they arrive, nor are they expected to be experts by the end of the year. Honours students are encouraged to ask questions if they feel confused regarding any theory or lab work, without any embarrassment.

4. Task Completion With Regard for Deadlines of Submission

Some tasks during the Honours course have an enforced

Depending on your contract, you will have a specified number of leave days and certain benefits like university fee discounts. The Human Resource department can assist with these matters. If you are being paid by the hour (i.e “paid on claim”), ensure you are aware of submission dates for your timesheets to enable prompt payment.

As a staff member, you are equally important as students, and should take advantage of being in a stimulating learning environment. If you are hard-working and productive, you may be encouraged to attend workshops or courses to enhance your skillset. Staff reviews take place annually, and topics like this can be discussed with your line manager. Being employed is a mutually beneficial partnership, and we would like you to have job satisfaction, so frank and open communications with your line manager during the review process is always encouraged.

SCIENTIFIC OFFICERS

Non-Academic Support Staff (in the lab)

Professional Administrative and Support Staff (PASS) include Research Assistants, Technical and Scientific officers, and Senior technical and Scientific Officers.

Support staff are generally hired according to the project to which they will be assigned. They are given job descriptions, and often research projects on which to focus. They are meant to fulfil those duties prior to anything else, and are expected to meet deadlines they are given. Whilst they may be happy to assist students who are struggling in the lab or need advice, it is not their responsibility to supervise students (unless they have formally agreed to, with their PI). Should they be able and willing to assist students, this should be at a convenient, perhaps pre-arranged time that suits them. Generally speaking, support staff do not get paid overtime, so time-management skills and multi-tasking are very important. Support staff members often have to juggle many tasks and responsibilities in order to contribute towards the smooth-running of the Division and their respective research projects. These tasks may include, for example, maintaining the database, ensuring particular equipment is working, performing services like DNA isolations, following standard operating procedures (SOPs) to ensure chemicals and consumables are stocked, performing diagnostic tests, gathering data for the PI's, and performing research. Often the general tasks are distributed amongst different staff members, so their responsibilities within the lab may differ slightly from each other.

If you are performing research as a support staff member, it is a good idea to clarify up-front with your PI whether you will be able to publish manuscripts arising from the work, either as a first author or co-author (depending on your contribution). It is important that both parties agree on the rights and responsibilities of the manuscript authors, from the beginning. It is also essential to get a clear understanding of your job description up-front, and what your PI's expectations are – but also check that these fall in line with the general UCT job descriptions for your position (job title and pay-class).

submission date (eg. submission of a SciComm or module assignment), while in some cases the student, along with his/her supervisory team, may set deadlines for literature review drafts etc. The onus is on the student to meet these deadlines, and in the case of the latter, to consult with the supervisory team if necessary in order to amend the date.

Remember at Hons level you are evaluated on skills acquisition. You will be working on real projects, thus, sometimes you are fortunate to be involved or included in a publication that incorporates your research work.

In addition to your loving parents, your supervisor will be one of the most important people during the time you will be working on your project. You do not follow university dates for holidays, you will have to discuss your leave with your supervisor. But don't worry, you will get lots of support from the Convening team.

Social Expectations:

a. Participation

Honours students are encouraged to participate in Divisional events (eg. Welcome functions, Spring Day etc) and are not excluded from any Division activities. Students are welcome to take initiatives upon themselves and ask the Division to participate (eg. the honours class of 2016 spear-headed the Santa Shoebox project in the Division).

b. Get Comfortable

Honours students are welcome to use the Division facilities, including the tea/meeting room in Wernher Beit, the kitchenette in Falmouth, and lab facilities. Students shouldn't feel as if they should refrain from using such facilities as a result of being in Honours. If it comes to lab work and he/she is unsure, ask away!

MASTERS (MSc)

This is the most unfamiliar territory you've embarked on. Very different from the structured, well planned, well guided honours programme you've just completed. Here, you start getting a feel of what it means to be an independent researcher. Good thing we've put this guide together to let you in on a few crucial do's and don'ts.

So, what should you not do?

- **Don't think you have more free time:** --> Yes, in theory you do have more "free time". Free in that you have more freedom to decide how to use it and not someone else.
- **Don't wait to be instructed:** --> No timetable has been drawn up for you, you might have a pretty rough skeleton (start at 8/9, end at 4/5) but most of it is up to you.
- **Don't throw away your honours notes**→ You will need your basic teachings to understand concepts that you need to apply and master in this level of your studies.
- **Don't think you shouldn't ask for help** → Remember you are still learning, but be sure to try it on your own first before looking to be assisted.
- **Don't waste time** → 2 years goes by quite quickly. Do all that you can when you still can.

So what should you do?

- **Plan right from the beginning**→ Create a year plan for your project with deadlines for various parts of the project. If you fail to plan, you plan to fail, or perhaps take longer than 2 years. Then, review your plan as time moves along. This can be weekly, Monthly and quarterly in order to keep on track.
- **Read. Read. Read.** → I can't say this enough. Look for knowledge. Be curious about your topic and the field of Human Genetics. You only learn more when you read more. Read up on techniques and principles behind them. Understanding the principles behind the techniques allows you to apply them

INTERNS

We are glad to have you here! You may be from another University, Town or Province and feel like a duck out of water. But rest assured, everyone here has felt like you!

You need to know that we are happy you are here as your presence will be a source of assistance to us as well as a means for you to realise what working in a research environment is all about.

You can add immense value and your time with us can be very constructive.

- The most important thing to bring with you is a positive attitude and a willingness to learn!
- Be open to this new and exciting environment!
- Try and keep that enthusiasm going and do not get sucked into complaining and negativity.
- If you receive criticism, evaluate it honestly and decide that you are here to learn and no-one expects you to be perfect. Try not to take it personally. We all make mistakes. The person who has never made one has yet to be born!
- Remember we all have different personalities and ways of doing things.
- As a research environment, we value accuracy, attention to detail and time management.
- If you don't know what we want and you are expected to do something, please ask as soon as possible. We will be happy to explain it again, rather than you pretending to know what to do and then causing hiccups!

That said, we hope you have a wonderful experience and eventually leave with lasting friendships that you have made in Humgen!

POST-DOC

We consider postdoc for various reasons, be it keeping busy while awaiting examiners reports or while browsing through the job markets, but one thing for sure is to **stay competitive in today's job market**, both tenure-track and industrial. Get involved and get diverse skills, you will need them one day.

To make it feasible: Postdoctoral Fellows should **develop and carry out a work plan** for their fellowship. This will serve as a guide and motivation for achieving the goals set for the fellowship. Work plan should be developed with input from the host PI or mentor. **Assess** your skills, strengths and areas that need development by taking a realistic look at current abilities

Outline your long-term career objectives and Broaden your knowledge and experience base: Start and end the fellowship with an **open mind** about career paths. A fellowship does not guarantee you a tenure-track positions however, there's hope in the numbers finding positions in 'alternative' careers. Attend regular meetings, i.e. seminars, journal clubs and progress meetings, to share updates on research, discuss relevant papers, explore career opportunities and prepare for conferences, and possible collaborations.

Network & Work efficiently and effectively: keep up a broad list of contacts. Personal connections parlay into positions, contributing to a successful postdoc experience. Don't be afraid to **ask for help**. There is a possibility to travel to a different lab for training or assistance in conducting an experiment that cannot be carried out locally

Apply for funding: Fellows do not have a salary and purely survive on funds from external sources. Nothing frustrates fellows more than the inability to pay their bills. Develop regular dialogue with host PI. Of utmost importance is to establish your potential for establishing a successful, independent research program, which is essential for positions in either academic or applied research.

Remember, you are a highly educated, highly skilled and intelligent adult – you are responsible for guiding the course of your own career

better but also decide if there's a better way around the research question.

- **Write** → Write down everything that you learn, or do, or hear, or see. Even if it won't go into your thesis, be sure to write it down.
- **Work** → Once you know what to do and how to do and why you need to do it and have planned when to do it, get to doing it. ASAP. You rather finish your lab work early than wait for later. If you start early, you can change anything that might not work as well as you had thought. This is science, anything can happen and need to be changed. Give yourself enough time to go back and polish your work. Remember you are mostly evaluated on how much you have "mastered" skills in your discipline.
- **Publish** → The work you are doing is relevant to the field you are working in, thus think about how it can be used to generate a research paper. Even your literature review can be published as it highlights gaps and trends in current literature. This will help build your profile as a scientist as well as your CV to a potential employer.
- **Present your work:** Look for opportunities to present your work. This is can be at research days, seminars, and conferences. The more you talk about your work, the more engage you become with it and you see the relevance of it. It's a great tap on the back along the journey which can become mundane. Think of these as little treats along the way to help you keep going to the end.
- **Graduate**→ At the end of it all, you are here to acquire a Master's degree in Human Genetics, so write that thesis and get that degree!

REGISTRARS

As Medical practitioners you may be used to already looking after the best needs of your patients. However, one needs to consider the family in Genetics and manage the patient as a whole.

Here are some tips from Registrars in the division:

- You will be very busy running around to clinics and ward-referrals so don't expect to have much time on your hands.
- Start your logbook from day 1.
- Ensure you keep good records and follow-up your patients and results.
- Read the SA College of Medicine guidelines for part 1 and 2 and plan your studies accordingly.
- Study from day 1!!! This is very important!
- Make sure you are well prepared for common conditions (ensure you have read up on basic genetics).
- Read up on all cases afterwards. You will be expected to do self-directed learning.
- Try attend genetic courses that are available through other avenues (bioinformatics, genetic counselling courses, etc).
- Know your portfolio guidelines and start compiling from day 1.
- COMMUNICATION is important! Discuss patients with your consultants.
- You will be expected to work independently but also be a part of a multidisciplinary team and everyone should know how the clinic functions and assist where needed.
- Attend all meetings (academic and clinical).
- Keep an eye out for possible MMED projects from early on...ethics approval etc takes time.
- There will be teaching opportunities which will assist you in your learning. Grab hold of these opportunities.

PHD

What to expect when you're a PhD student at HumGen. You should remember that the tips below, should be read together with those pertaining to MSc. You should have or be able to satisfy the MSc attributes to function at the PhD level.

- Doing a PhD is not easy (*yes really, it is not easy*). It is a major (*but rewarding*) undertaking so firstly make sure this is something you really want to do.
- You will be required to do the necessary literature review and refine your project hypothesis/hypotheses. You will also be required to keep updated with new developments in your field
- You will need to draw-up realistic timelines and ensure that you stick to them, bearing in mind that sometimes things do not always go to plan and your timeline needs to have some "wiggle" room
- You need to ensure that you are able to do all techniques/analyses required for your project and seek help when necessary
- Always schedule regular meetings with your supervisor to keep them updated about your progress
- Keep abreast of relevant courses and conferences in your field
- You will need to apply for your own funding (including travel funding).
- You are the driver of this project so you need to ensure that it gets completed. If you are stuck, it is ok to ask for help (from your supervisor or other senior members of the division)
- You need to read and by the end of your PhD be at least as good if not better than your supervisor in your area of study. This can only happen if you read widely and wildly.
- Remember PhD is different from Honours and Masters in that, you are now working to produce knowledge.
- Make sure you are working on something "novel", i.e, it's not been reported already
- Ultimately, make an effort to publish all or part of your PhD work before you submit your thesis. If you are slow, someone else may publish before you
- Even when things seems impossible, it will get better, you will hand-in and become a Dr J