

Stellenbosch University

GLOBAL HEALTHCARE TECHNOLOGIES 2019 PROGRAM NOTES



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Program Information

Program Team

There are a number of different partners and players that make important contributions to your academic, cultural, and personal experience in South Africa.

Program Directors



Matthew R. Glucksberg, PhD, Co-Director

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Professor, Biomedical Engineering, McCormick School of Engineering and Applied Sciences; Affiliated Faculty, Center for Innovation in Global Health Technologies (CIGHT)

Research Interests: blood pressure and flow in the retinal circulation; non-invasive sensing of blood flow and analytes; pulmonary mechanics and lung liquid transport



David Kelso, PhD, Co-Director

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Professor, Biomedical Engineering, Northwestern University
Director, Center for Innovation in Global Health Technologies (CIGHT)

Research Interests: biosensors; kinetics of antibody and DNA binding reactions in solution and on solid phases; medical instrumentation; optimization of drug administration; pharmacokinetics



Martin Nieuwoudt, PhD, Co-Director

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Institute for Biomedical Engineering (IBE), Stellenbosch University

Research Interests: Bioprocess and Tissue Engineering, Biosensors, Machine Learning, Biostatistics, Epidemiology.

Course Coordinators

**Sara S. Grobbelaar, Course Coordinator (BME 388-SA: Health Systems Engineering)**

Associate Professor, Industrial Engineering, Stellenbosch University
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Research Interests: Health Systems Engineering, Innovation for Inclusive Development, Inclusive Innovation Systems, Innovation Ecosystems

**Mladen Poluta, Course Coordinator (BME 389-SA: Health Technology Management)**

Director: Health Technology, Western Cape Department of Health
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Research Interests: Integrated Assessment, Innovation & Management of Health-related Infrastructure & Technology (iAIM-HIT) with a focus on the public sector in developing countries; clinical engineering; making a difference.

**Cobus Muller, Course Coordinator (BME 391-SA: Healthcare Technology Innovation & Design)**

Senior Lecturer, Biomedical Engineering Research Group,
Stellenbosch University
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Research interests: Musculoskeletal biomechanics, Cardiovascular biomechanics, Joint/tissue level computational modelling

**Dawie van der Heever, Course Coordinator (BME 391-SA: Healthcare Technology Innovation & Design)**

Senior Lecturer, Biomedical Engineering Research Group,
Stellenbosch University
Director of the Neural Engineering Research Venture
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Research Interests/Specialties: Neuroscience, Cognitive Science, Human Behaviour, Machine Learning, Medical Device Development

**Jacob Du Plessis, Course Coordinator (GBL HLTH 314-SA: Health and Community Development)**

Lecturer in Sociology, Stellenbosch University
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Research Interests: Pedagogy of service learning, Heritage and history of Kayamandi, Preservation of Papegaaiberg nature reserve, Intersection between development and health

Jean Poluta, Program Facilitator

Registered Nurse and Midwife, Sales and Marketing in Pharmaceutical and Medical Equipment industry. For more than 10 years, Jean has been acting as a facilitator for the Global Healthcare Technologies program, assisting faculty and students with projects. She organizes the program in Cape Town and serves as a student liaison for the GHT program.

Josh Fischer, Student Liaison

PhD student in Biomedical Engineering, Stellenbosch University. As a student liaison, Josh will be instrumental in facilitating interactions between GHT students and local post-graduate BME students. He can serve as a resource for understanding your host country and community, local culture and customs, and current events, and he will also accompany the group on some field activities to help ensure smooth operations and contribute to student learning.

Stellenbosch University International**Werner de Wit, Coordinator, Summer School & Short Programmes, Global Education Centre**

Werner and the staff in the Global Education Centre at Stellenbosch University International can provide you with information, support, and connections to student life at Stellenbosch University, including housing, student clubs, transportation, the gym and other SU facilities. They are also important resources for promoting your health and safety at Stellenbosch.

The Global Education Centre plays the following roles:

- **Orientation:** Introduces students to South Africa and Stellenbosch, including cultural adjustment, safety and security on campus, campus services, and a campus tour.
- **Campus Liaison:** Acts as a reference point to student life and student services on Stellenbosch campus.
- **Primary In-Country Emergency Contact:** Werner is available 24/7 in case of emergency. If you get sick, have any trouble, or experience any other emergency incidents, Werner will help and support you to ensure your safety, security, comfort, and well-being.

Tentative Program Schedule and Activities

Your program will run from **Monday, January 7**, to **Sunday, March 24, 2019**. Below is a basic schedule of important program dates. The program evolves depending on the progress of projects, appointments with mentors and stakeholders, etc. Please note that activities and dates are subject to change.

DATES	ACTIVITIES
Saturday, January 5	Depart United States for Johannesburg, South Africa
Monday, January 7	Arrive in Johannesburg, Airport pick-up Check in to hotel in Johannesburg
Tuesday, January 8 – Wednesday, January 9	Activities in Johannesburg
Thursday, January 10	Group Flight from Johannesburg to Kruger (<i>arranged by ULA</i>)
Thursday, January 10 – Monday, January 14	Safari in Kruger <i>Note: you will need to acquire antimalarial medication for the time that you are in Kruger National Park (5 days/4 nights). See the Malaria section below.</i>
Monday, January 14	Group Flight from Kruger to Cape Town (<i>arranged by ULA</i>) Airport pick-up and transfer to Stellenbosch Check in to accommodations in Concordia
Tuesday, January 15 – Wednesday, January 16	Orientation in Stellenbosch
Thursday, January 17 – Sunday, January 20	Activities in Cape Town
Monday, January 21	Courses begin at Stellenbosch University (SU)
Sunday, March 24	Depart Cape Town for United States

Course Descriptions

Refer to the **Academics** section of the Orientation Guide for more information about academic information, expectations, and policies.

BMD ENG 388-SA: Health Systems Engineering

Course Coordinator: Sara Grobbelaar

This course provides an introduction to health systems in the context of disease burden, with special emphasis on developing countries and the devices and drugs used to combat diseases there.

BMD ENG 389-SA: Health Technology Management

Course Coordinator: Mladen Poluta

Students learn formal concepts and methodologies used in health technology planning, assessment, and adoption for cost-effective healthcare delivery

BMD ENG 391-SA: Healthcare Technology Innovation and Design

Course Coordinators: Dawie van der Heever and Cobus Muller

This course covers principles and practice of medical device design for the developing world. Working in teams, students will evaluate user needs within the context of under-resourced segments of the South African healthcare system and develop a design project using appropriate technologies.

GBL HLTH 314-SA: Health and Community Development in South Africa

Course Coordinator: Jacob Du Plessis

This course explores health-related issues confronting South Africa, with emphasis placed on understanding the social, political, and economic determinants of health within the context of apartheid and post transition policies.

Excursions & Study Trips**Johannesburg & Kruger National Park**

Johannesburg is an important cultural, political, and historic center in South Africa. Possible visits in Johannesburg include Soweto, the Apartheid Museum, Constitution Hill, and the Cradle of Humankind as well as visits to local hospitals. Under the direction of noted scholar David Bunn, a Northwestern University alumnus, students will visit Kruger National Park. Students will also visit rural clinics in the area.

Cape Point

A day trip to Cape Point at the southern end of the Cape Peninsula offers beautiful panoramic views and interesting maritime history.

Academic Program: Reflections from Past Students

"The design course was my favorite because it was by far the most engaging. However, the global health class was probably the most interesting, as South Africa, and Africa in general, has an incredibly serious and complex health problem." ~ Nicholas Brandis, 2015

Stellenbosch University¹

Stellenbosch University is recognized as one of the four top research universities in South Africa. It takes pride in the fact that it has one of the country's highest proportions of postgraduate students, of which almost ten percent are international students. The University lies in the picturesque Jonkershoek Valley in the heart of the Western Cape Winelands, about a 35-minute drive from downtown Cape Town.



It has five campuses and a total of ten faculties:

- Stellenbosch: Arts and Social Sciences, Science, Education, AgriSciences, Law, Theology, Economic and Management Sciences, Engineering
- Tygerberg (Bellville) and Worcester (rural campus): Health Sciences
- Belville Park: Graduate School of Business, School of Public Management and Planning, Part-Time Studies Division
- Saldanha: Military Science

Language

Stellenbosch University promotes Afrikaans as an academic language while also acknowledging the importance of English and isiXhosa. The official *Language Policy and Plan of Stellenbosch University*, which was originally approved by the university's Council in 2002, emphasizes Afrikaans, but it has evolved since then, and English is now becoming more standard as the language of instruction.

Academic Context

South African academic life is very similar to the European tradition. Courses are a mixture of lectures and seminars with group project time and site visits, individual laboratory time, and library work. Courses for this program are customized, so while they are taught by Stellenbosch University professors, they do not necessarily reflect the academic culture or pedagogical style typical of Stellenbosch University courses.

Accommodations

Your accommodations and a few group meals are provided as part of the program package, but you are responsible for most of your own meals.

Housing

You will be living in Concordia, an international dorm in the residential area on campus. It is a safe, gated residence requiring students to show their ID upon entering. There are many dorm buildings within the same complex, some of which are occupied by South African students. In your residence, you will share a flat with Northwestern – or other international students – of your same gender.

¹ From "About Stellenbosch University," <https://www.sun.ac.za/english/about/> and "Living in Stellenbosch," <http://www0.sun.ac.za/pgstudies/living-in-stellenbosch-1.html> (2018)



Your room will be furnished with a bed, a desk, a chair, and a closet. You will also be provided with a pillow, sheets, blankets, and pillowcase. Buildings in South Africa often do not have central heating or cooling, so you should pack accordingly. Please note that you are responsible for washing your sheets. Laundry facilities exist within Concordia.

Although the building is secure, you should be careful with your belongings: you should always lock your rooms and make sure that your computer and other valuables are put away and locked up. Please note: Take care of your personal belongings. Stellenbosch University will not be held responsible for the loss of personal property.

Meals

Meals are not provided, but you will have mini-kitchens in your apartment suites to prepare your own meals. There are a number of eateries and food shopping centers in the area. The nearest grocery stores are Checkers, Spar, Shoprite, Pick & Pay. Neelsie, the student center (see below), also has a wide variety of foods at very cheap prices. Stellenbosch also has many great reasonably priced restaurants. (See the **Food & Water** section in the FAQs.)



Stellenbosch University Resources & Facilities

Langenhoven Student Centre (Neelsie)

Stellenbosch University's Norris-equivalent is the Langenhoven Student Centre, better known as the Neelsie. It is named after an Afrikaans author, CJ Langenhoven, who was an alumnus of the university. This modern center offers students administrative and financial services, including ATM facilities for four branch banks. There is also a large food hall, which caters to a wide variety of tastes ranging from full home-style meals to light meals and fast food. The top floor houses the student council and other student organizations. Although there is a bookstore, post office, and travel shop in Neelsie, you will probably find most commercial and entertainment needs better fulfilled at the Eikestad shopping mall just off campus or in the historic downtown area of Stellenbosch.

Library

The JS Gericke Library is one of the biggest subterranean libraries in the world with a total floor space the size of three rugby fields! It houses a considerable volume of books, study desks and cubicles for your learning needs. It is close to Neelsie and is a popular place to study.

Email & Internet

You should plan to bring your own laptop to use throughout the program. However, there are computer labs available for your use in University buildings nearby. The biggest computer lab is called Humarga, which has printing facilities.

Every room in Concordia has an Ethernet jack that connects to your personal computer. You will not be charged by the amount of time you use the Internet but by the amount of data you use. For example, it will be fairly cheap to check your e-mail but expensive to download a movie or Skype. (Download any large files to your computer before you depart.) But do not be alarmed about data usage: students usually do not exceed their data allotment, and data is relatively inexpensive to purchase if you need more.

Tip: If your laptop does not have an Ethernet port, make sure to bring relevant adapter(s).

Postal Mail and Courier Services

Mail between the U.S. and South Africa generally takes 10-20 days, but DHL and FedEx operate in South Africa. Keep in mind that any packages sent from the U.S. will likely be opened and examined by customs, so it is not advisable to send medications (these should be packed with you) or irreplaceable or expensive items. Your mailing address at Stellenbosch is:

Your Name
c/o Werner de Wit
Stellenbosch University
Global Education Centre
Private bag X1
Matieland 7602
South Africa
Phone: +27 (0)21 808 9002

Courier services require a physical address. If you want to use a courier service, use the following address:

Your Name
C/O Werner de Wit
Stellenbosch University
Global Education Centre
RW Wilcocks Building (South)
cnr Victoria and Ryneveld Streets
Stellenbosch 7600
South Africa
Phone: +27 (0)21 808 9002

Student Life

Stellenbosch University students are very active in student and residential life. During orientation, you will be introduced to various student clubs and societies in which you can get involved. Find out more information about student societies here:
<http://www.sun.ac.za/english/students/student-societies/Pages/default.aspx>.

Gym

You will have access to the student Gymnasium using your Stellenbosch ID and a small additional fee. The facilities include an indoor track, squash courts, a weight training

area, circuit training, an indoor and outdoor pool and great classes. There are also a number of sports teams and clubs at Stellenbosch, so contact the Global Education Centre for more information about how to get involved, schedule permitting.

International Student Organization of Stellenbosch (ISOS)

ISOS was established in 1996 and aims to bring together all international students. It assists in supporting, facilitating and orientating international students and goes a long way in serving the social needs of international students on campus. Local students are also strongly encouraged to become members. Students should follow the ISOS notice board at the Global Education Centre and contact the student coordinator at isos@sun.ac.za.

South Africa

South African history and culture are both rich and complex. We provide some basic information below, but we encourage you to do some research about the history of your host country as well as general country information, including the political system, geography, the economy, population, culture, and current events. Your ability to take full advantage of your time abroad will be influenced by the amount of preparation and research you do before you go, so read as much as you can! Refer to the list of resources in the **Links & Recommended Reading** section.

Fast Facts²

- Surface Area: 1,219,090 sq km (slightly less than twice the size of Texas)
- No. of Provinces: 9
- Population: 55.3 million
- Government type: parliamentary republic
- GDP per capita: \$13,600 (est.)
- GDP growth: 1.3% (est.)
- Major industries: mining (world's largest producer of platinum, gold, chromium), automobile assembly, metalworking, machinery, textiles, iron and steel, chemicals, fertilizer, foodstuffs, commercial ship repair
- Population below poverty line: 16.6%
- People living with HIV (15-49 years old): 18.8%
- Religions: Protestant (36.6%), Catholic (7.1%), Muslim (1.5%), other Christian (36%), other (2.3%), unspecified (1.4%), none (15.1%)



© <http://geology.com/world/south-africa-satellite-image.shtml>

Population

South Africa is a nation of diversity, so it is no surprise that the country calls itself the Rainbow Nation. In general, people are classified into four racial categories, a legacy of apartheid:

- Black Africans (80.2%): refers to anyone of African descent, including the Nguni, comprising the Zulu, Xhosa, Ndebele and Swazi people; the Sotho-Tswana, who include the Southern, Northern and Western Sotho (Tswana people); the Tsonga; and the Venda.
- White South Africans (8.4%): refers to anyone of European descent, including the Afrikaners, descendants of Dutch, German and French Huguenot who came to the country from the 17th century onwards; English-speakers, descendants of

² <https://www.cia.gov/library/publications/resources/the-world-factbook/geos/sf.html> (2018)

settlers from the British Isles who came to the country from the late 18th century onwards; and immigrants and descendants of immigrants from the rest of Europe, including Greeks, Portuguese, Eastern European Jews, Hungarians and Germans.

- “Coloured” South Africans (8.8%): refers to people of mixed lineage descended from slaves brought to the country from east and central Africa, the indigenous Khoisan who lived in the Cape at the time, indigenous Africans and whites. The majority speak Afrikaans.
- Indian/Asian (2.5%): refers to anyone with roots in the Indian subcontinent and Asia, many of whom descended from indentured workers brought to work on the sugar plantations of what was then Natal in the 19th century. They are largely English-speaking, although many also retain the languages of their origins. There is also a significant group of Chinese South Africans.

Although apartheid no longer exists, many South Africans still identify themselves and others according to these categories, but within each of these categories is a significant amount of diversity. The South African government also uses these categories to determine the impact of development initiatives and policy and how the different race categories are affected in terms of equitable redress in South Africa.³

South Africa recognizes 11 official languages, to which it guarantees equal status. These are: Afrikaans, English, isiNdebele, isiXhosa (the indigenous language most widely used in the Western and Eastern Cape provinces), isiZulu, Sesotho sa Leboa, Sesotho, Setswana, siSwati, Tshivenda and Xitsonga.

According to the 2011 census, isiZulu is the most common home language, spoken by nearly a quarter of the population (22.7%). It is followed by isiXhosa at 16%, Afrikaans at 13.5%, English at 9.6%, Setswana at 8%, and Sesotho at 7.6%. The remaining official languages are spoken at home by less than 5% of the population each.⁴

Contemporary South Africa

South Africa's post-apartheid governments have made remarkable progress in consolidating the nation's peaceful transition to democracy. Programs to improve the delivery of essential social services to the majority of the population are underway. Access to better opportunities in education and business is becoming more widespread.⁵ However, social inequality remains very high. Among the middle classes, a small minority of African South Africans has become very affluent (in terms of population, more African South Africans are considered affluent than White South Africans), while the majority of Africans remain poor. In fact, when considered intra- racially, South Africa consistently ranks as one of the most unequal countries in the world, as determined by the Gini coefficient, a measure of inequality of income or wealth. Nevertheless, transforming South Africa's society to remove the legacy of apartheid and

³ <http://www.statssa.gov.za> (2017).

⁴ <https://www.cia.gov/library/publications/resources/the-world-factbook/geos/sf.html> (2018).

⁵ <http://www.state.gov/r/pa/ei/bgn/2898.htm> (2017).

the prior impact of colonialism will be a long-term process requiring the sustained commitment of the leaders and people of the nation's disparate groups. To familiarize yourself with contemporary issues in South Africa, we encourage you to read South African newspapers online. (See the **Links & Recommended Reading** section.)

Transportation

There are many modes of transportation in South Africa, some of which are safer and more reliable than others. Below is basic information about how to get around, but also refer to the **Health, Safety, and Security** section for tips about safe travel.

- **Foot and bike.** On the Stellenbosch campus, you won't have a problem with transportation. Many Stellenbosch students use bikes, but your classes and the center of town are both within walking distance of the dorm. Should you wish, bikes are available for rent from the university.
- **Bus and rail.** There is a metrorail that travels between Stellenbosch and Cape Town, but it is not always the safest or most reliable form of transportation. (There is no bus service.) There are more reliable bus services in Cape Town, thanks to the investment in transportation infrastructure from the World Cup in 2010. Public transportation in South Africa, however, can be very dangerous, particularly at night, so it is important that you have alternate transportation plans. All travel arrangements can be made via Stellenbosch University International.
- **Minibus Taxis.** According to International SOS, these are the most common form of public transportation in Cape Town, but they should be avoided, as they are unreliable, unsafe, and often in very poor condition.
- **Taxi/Uber.** Metered cabs are very reliable for getting around Cape Town. They wait at taxi ranks around Cape Town, but they can also be called for pick-up at specific locations. They charge approximately 10 rand per kilometer. Uber also operates in Stellenbosch and Cape Town. Be sure you know where you are going and travel in groups whenever possible.
- **Private Car/Shuttle.** The Global Education Centre can advise students about approved transportation for personal day trips or excursions. Student drivers at Stellenbosch, who will often accompany you on your program excursions, may be available for personal trips.

Getting To/From the Airport

Stellenbosch University will arrange all transportation to/from the airport for program-related activities. However, if you arrange any personal trips that involve long road trips or include air travel, you must first consult with your Program Director about your travel plans. Note: international travel, such as to Swaziland or Lesotho, can have safety and legal implications. Once you have notified and received approval from your Program Director, then consult with the Global Education Centre for a recommendation of a shuttle provider.

Visas

U.S. citizens will not need a visa for South Africa for this program, since they can enter as a visitor and stay for up to 90 days. If, for any reason, you think that you will stay in South Africa after the program is completed and will exceed a 90-day visit, or if you do

not hold a U.S. passport, please contact ULA about securing the appropriate entry document.

Identity & Diversity⁶

The sections below provide some basic information, summarized from the Diversity Network Country Diversity Climate Notes for South Africa, and reflections from past students about the cultural climate of South Africa. Also refer back to the **Identity and Diversity** section of the Orientation Guide above for general guidance and resources.

Gender Roles

The rate of violence towards women, including rape, is higher in South Africa than in many other countries, and for female study abroad students, facing the unfamiliar can raise levels of anxiety. This is compounded by language and cultural differences as well as risk factors related to health and safety. Do not put yourself at greater risk for harassment by becoming intoxicated, accepting drinks from strangers, leaving your drink unattended, or being alone.

Gender: Reflections from Past Students

- *“It was somewhat of a gendered society, especially in [rural areas]. Girls should be prepared for more catcalling, whistles, and probably more aggressive behavior from local guys than they may be used to in the U.S.”* ~Braeden Dolan, 2014
- *“It is very patriarchal. Girls are totally treated differently than in America. Gender issues in general are not discussed/accepted in most spaces.”* ~Kaley Wendorf, 2015

Sexual Orientation and Identity

South Africa has made significant strides in the treatment and institutional support of its LGBTQ population in recent history. Before and during apartheid, gay and lesbian individuals were persecuted for their sexual orientation, but since then, South Africa has taken many measures to correct errors of the past and improve conditions for gay and lesbian South Africans. In the post-apartheid era, gay and lesbian individuals are protected under South Africa’s constitutional law, which prohibits discrimination based on sexual orientation, and since 2006, same-sex civil marriage has been legal.

In general, there is an atmosphere of tolerance toward the LGBT community in South Africa, and gay and lesbian students traveling to South Africa will find welcoming communities in the country’s most progressive cities.

Resource:

- Gay and Lesbian Memory in Action (GALA): <https://gala.co.za>

Race and Ethnicity

South Africa’s history of racial categorization and legislation continues to influence how South Africans identify themselves and others. Discussions over race are ongoing in South Africa, so it is likely that study abroad students will find themselves involved in

⁶ Adapted from the Diversity Abroad Network <https://www.diversityabroad.com/study-abroad-africa/south-africa> . (2017).

these discussions, which may prove challenging at times. This may be particularly difficult for study abroad students to navigate, since international visitors do not necessarily fall into South African historical racial categories.

For example, African American students may find that their study abroad experience is the first time that they discuss race as a member of the majority group, while white students may experience what it feels like to be a minority. Since remnants of race-based discrimination are still apparent, students of color, including African American and Asian American students, may experience racially motivated comments that may be uncomfortable. If you encounter a situation that is difficult to understand or cope with, or that you find offensive or threatening, don't hesitate to reach out to your Program Director or other on-site staff for support. (See also the **Background: South Africa** page of the Country Information section.)

Race & Ethnicity: Reflections from Past Students

- *"Relating to race, it is important to understand the legacy of apartheid. Most attitudes regarding race and racism in South Africa today stem from apartheid. Specifically, the attitude of race being defined into three categories - "Black", "White" and "Colored" (mixed race). These categories define how most South Africans see race and also continues to define social and economic structure in the country today."*
~Hannah Baiyor, 2015
- *"For me, the biggest issue I had to deal with was my racial identity. As an Asian-American, I was very self-conscious of how different I was from nearly all the communities we visited. In Stellenbosch, one other student from NU and I were usually the only Asians in one area. One time at a restaurant, a local teased me about the Chinese language, and I was pretty offended by it. But dealing with this, I just took time to reflect about my background and not let it bother me."* ~Carol Feng, 2015
- *"South Africans are not afraid to be very blunt about race. They don't often equate what they are saying as being racist, although to Americans it is extremely racist."*
~Lily Chang, 2015
- *"Societal divisions by race are extremely acute (apartheid is far from over in practice). This is something to mentally prepare for."* ~Kathleen Clark, 2017
- *"People are still very close-minded about sexual orientation and race is of course a major issue. Be aware of the differences you notice and let that guide you in understanding South Africa's past and present, as well as to make you more conscious of these issues back home."* ~Annika Winsnes, 2017

Religion and Spirituality

South Africa has a large religious population and is recognized for its religious tolerance. The country's constitution and laws specifically protect religious freedom. The majority of South Africans identify as Christian. South Africa does not have any significant policies restricting the practice of non-Christian religions, which make up about 15 percent of the country's population.

Health, Safety, and Security

The sections below provide information about health and safety risks and resources in your program location, including reflections from past students. Refer back to the **Health, Safety, and Security** section of the Orientation Guide above for more comprehensive information about preparing for and responding to health, safety, and security concerns.

Staying Healthy

Medical care in South Africa is considered to be amongst the best in the world. Private hospitals and medical staff are of an international standard, and all large centers have full specialist care. All providers speak English. A wide range of medications is available from hospital and private pharmacies.

As a reminder, you must complete all required immunizations for travel to your site. Check health and safety recommendations provided by the Centers for Disease Control and Prevention:

http://wwwnc.cdc.gov/travel/destinations/traveler/extended_student/south-africa.

Malaria

Malaria is present in Kruger, so you will need to acquire appropriate antimalarial medication for your visit to Kruger (5 days/4 nights), as well as take preventive measures to avoid mosquito bites. Appropriate antimalarial medications typically include:

- Atovaquone plus proguanil (Malarone®)
- Doxycycline (many brands and generics)
- Mefloquine (Lariam® and generics)

Which medication should be prescribed to you is dependent on your health history, so it is critical to consult with a travel health professional about the best option for you.

Although antimalarial medication is available in South Africa, do not defer obtaining antimalarial medications until you arrive. Such medications must be started before your travel to Kruger. If your antimalarial medications are lost or stolen while you are in South Africa, contact SUI, ULA, or GeoBlue for a referral to a reputable pharmacy.

Understand, too, that antimalarial medications only work if they are taken as prescribed. If you are not accustomed to taking medication regularly, establish a routine that will help you remember, such as taking them at bedtime or at breakfast.

Also plan to pack clothes that cover you, insect repellent, and hydrocortisone cream to treat bites. Remember that you must continue to take your antimalarial medication throughout the entire duration of your trip and for the appropriate amount of time after your return. Stopping your medication will put you at risk.

Tuberculosis Test

All students on this program will be expected to get a TB test before they depart and another test 8-10 weeks after their return. Since you will be visiting health facilities while in South Africa, it is important for you to test yourself before and after your program to confirm that you were not exposed to TB.

Alcohol and Other Drugs

Access to alcohol in South Africa is quite easy, and alcohol figures quite prominently in South African food and social culture. It also contributes to some problematic public health issues in South Africa, particularly its claim to the highest levels of fetal alcohol syndrome (FAS) in the world. Refer back to this section of your Orientation Guide for more health and safety guidelines.

Safety and Security⁷

In addition to the **Standing Travel Advice** outlined in the Orientation Guide, you are advised to follow these precautions during your time in South Africa. Also refer to the U.S. Department of State Country Information for safety and security guidelines: <https://travel.state.gov/content/travel/en/international-travel/International-Travel-Country-Information-Pages/SouthAfrica.html>

Crime

- Avoid travel to low-income residential or other “high risk” areas unless with adequate support. Consult with local contacts regarding unsafe areas in South Africa.
- Muggings and crime at ATMs (cash machines) is common. Commonsense precautions, most notably undertaking withdrawals only during daylight hours and from machines within secured shopping centers, can help reduce the risk. Wherever possible, cash should not be withdrawn at gasoline stations, which are often targeted by criminals.
- Criminals may be armed; in the event of being accosted, do nothing to resist or antagonize assailants.
- Keep a vigilant eye on your belongings when flying in/out of Cape Town International Airport (CPT), as luggage thefts have been reported
- Be cautious if walking in the Table Mountain National Park in Cape Town, where muggers target visitors in isolated areas. Walkers should stay on marked paths, keep within sight of other walkers, and ensure that they have enough time to complete a walk and leave the park before dark.

The same precautions that you use for personal safety and the protection of property elsewhere in South Africa should be used in Stellenbosch, and maybe even more so given the concentration of people, cell phones, laptop computers, and vehicles at the university. The Stellenbosch University Risk and Protection Services (USBD) implements preventative measures for campus safety, such as campus patrols, a 24-hour control room, and other services, but these only work if students make use of them! Below is a list of crime prevention services and safety tips:

⁷ Adapted from International SOS (ISOS). (2016).

- Risk and Protection Services. USBD delivers in-house security- and safety services at the Stellenbosch, Tygerberg and Bellville Park Campuses. Their service centers are manned 24 hours a day and are the reporting points for incidents such as theft, trespassing and assault. They also serve as general information centers.
- Green Route. The Green Route is a preferential route that covers all the academic buildings, residences, and computer centers on campus. It is actively patrolled by students and security officials wearing orange armbands from 21:00 to 06:00. It is recommended that students use the Green Route when walking around on the main campus after sunset.

Transportation

Getting around South Africa safely is doable, but it is something that you have to take seriously, as there are various modes of transportation that are unsafe. We have already described the safe transportation options available to you, but below is some additional advice for safe travel:

- If you are walking, use only brightly-lit, busy streets, and maintain awareness of your surroundings. Avoid all unaccompanied travel on foot.
- Metered taxis are a suitable means of travel in urban areas, but you either need to use a taxi rank or call an authorized taxi provider to arrange a pick-up. Uber is an alternative option. Sit in the rear of the vehicle and keep windows up and doors locked at all times. Keep valuables out of sight and place bags by your feet.
- At night, regardless of your gender, it is best to use taxis or Ubers rather than walking. Do not use public transportation at night.
- Never get into a vehicle with a driver who has been drinking or seems intoxicated.
- Train travel is not recommended, with the exception of the Gautrain service in Greater Johannesburg. Services are slow and several serious accidents in recent years have raised concerns over safety standards.
- When arranging personal travel, you must notify your program directors of your travel plans and possible contact number(s). Hiring a rental car and driving yourself to your destination is not permitted.

Social Unrest

Political demonstrations are frequent in Cape Town and Johannesburg, and there is potential for spontaneous social unrest connected to industrial disputes, community grievances, and other socioeconomic issues. Furthermore, beginning September 2016, in response to the government's announcement that 2017 tuition fees could increase by as much as 8 percent, students across several university campuses began demonstrating in protest. Although these protests typically did not become violent, were localized in specific business, university, or government districts, and did not target foreigners, protests related to these issues or others could begin again.

Unrest can also occur in the informal settlements around the N2 highway. Under no circumstances should students travel to informal settlements alone and they should avoid these areas at night – especially Kayalitsha, Guguleto, Langa and the Cape Flats.

As we outlined in the Orientation Guide, you should avoid all political rallies and demonstrations. If you find yourself caught in a protest, vacate the area immediately. Do not attempt to cross roadblocks erected by protesters.

Drought and Water Insecurity

Over the past four years, the Western Cape has experienced low levels of rain, culminating in a severe drought in early 2018. Due to recent rains, the water supply dams have partially recovered, but water restrictions are still in place in Stellenbosch and Cape Town. As of this writing (November 2018), Level 5 water restrictions are in place, limiting each person to 70 liters (approximately 18.5 gallons) of water use per person per day for the purposes of drinking, washing, and cooking. Students should try to conserve water whenever possible.

Western Cape Government:

<https://www.westerncape.gov.za/general-publication/latest-western-cape-dam-levels>

Health, Safety, and Security: Reflections from Past Students

- *“Students should be very careful when going to crowded areas such as clubs to not bring valuables (credit card, smartphone, etc) as several students were pickpocket[ed] while at nightclubs and bars. In addition, be careful with leaving bags unattended. This is a concern especially at the beach. Aside from that, everything is generally very safe and with good common sense you should be totally fine.” ~Hannah Baiyor, 2015*
- *“Drunk driving is a very real and dangerous reality there [in South Africa], it is not a foreign concept like some view it here [in the United States]. You experience it almost every time you go out, so plan ahead from day one to make sure you know where you are, where you are going, and if there is a safe way to walk or someone is a designated driver.” ~Duncan Orlander, 2015*
- *“Always travel with someone else at night. Preferably stay in a big group and Uber if you’re going more than a couple blocks.” ~Samantha Freshley, 2017*

Frequently Asked Questions (FAQs)

Weather and Packing

What is the weather going to be like?

Stellenbosch has a Mediterranean climate, with warm, dry summers (our winter) and cool, rainy winters (our summer). The climate can feel quite similar to northern California. It will be quite hot when you arrive, and temperatures will likely remain warm throughout the program. It can get chilly at night, so be sure to pack a sweater or jacket.

Is there anything special that I need to pack for my program?

You will be taking day trips and more extended excursions, so you will want things that travel easily. We recommend that you bring a backpack, duffel bag, or moderate-sized suitcase and a daypack. Bags with shoulder straps are preferable to suitcases, because they're easier to carry and are more portable. Also, for the Johannesburg and Kruger excursion, we will need for you to bring luggage that can be packed into vans and trucks, so be sure to bring a backpack, duffel back, or other soft bag.

Essentially everything else that you may need you can find in South Africa. Refer to the **Packing** section above for general guidelines about packing. Here are some additional suggestions:

- A pair of hiking boots/shoes if you intend to hike in South Africa
- A few pairs of closed-toed shoes, as no sandals/open-toed shoes are permitted during visits to clinics and health sites.
- A business casual outfit for presentations, clinic visits, etc. For clinic visits, you should wear decent, comfortable clothing; if you have an NU polo shirt, bring this to wear, as it will give a distinctive and professional appearance.
- Adequate supply of any medications you use regularly
- First aid kit with basic supplies and medicines for common travel maladies, including insect repellent, sunscreen, over-the-counter drugs for minor pain, insect bites, diarrhea, anti-itching, and motion sickness, as approved by your doctor
- Plug converter (these are also available for purchase in Johannesburg, when you arrive)
- Pack towel and/or beach towel

Food & Water

Can I drink the water?

Yes, most of the time. The vast majority of South Africans have access to clean water. Tap water is safe in all towns and cities, but it is recommended that you use bottled or boiled water in rural areas. Food is also safe, but be sure to clean any fruits or vegetables purchased at markets before eating them.

What is typical food?

Not surprisingly, the cuisine of South Africa is often called “rainbow cuisine,” since it draws from a variety of influences. Most meals incorporate meat or seafood (South Africans love their braais, or barbeques, as will you!). You will also find lots of restaurants specializing in international cuisines.

Is the local cuisine vegetarian friendly?

Yes. You are responsible for most of your own meals, and you can find lots of fruits, vegetables, and proteins at the supermarkets and at nearby restaurants.

Money

How much does the program cost?

See **Appendix I** or refer to the ULA website for a breakdown of program costs.

Are meals included in my Program Fee?

No. Some group meals are included in your program fee, but these are planned for special occasions and during excursions.

How much money should I plan to spend?

Refer to the student budget in **Appendix I** for an estimate of costs for additional meals and discretionary expenses. The figures included in the budget represent averages reported by past students.

How much cash should I bring?

You should plan to bring \$200 cash with you, plus a credit card and an ATM or debit card to use for purchases and to access additional funds. It is also recommended that you bring a second credit card in case of emergency.

Communications

What are my cell phone options?

You have a few options. You can get an international plan on your U.S. phone, however, it can be very expensive. You could unlock your U.S. phone and get a South African sim card. If you prefer not to use your U.S. phone at all, you may borrow a phone from the Global Education Centre. Remember, you are expected to be reachable by phone at all times abroad, so be sure to weigh your options and make a plan before you depart. For more information, refer to the **Communications** section above.

Transportation

Will I be picked up from the airport?

Yes. More information about airport transfers will be provided closer to the date of departure.

What if my flight is cancelled or delayed?

If you will not arrive as scheduled, please email and call ULA and/or Werner de Wit to let us know when you are scheduled to arrive.

How much free time do I have? What can I expect to do outside of class?

There is free time before and after classes, and you will have many weekends free. Contact past program participants for ideas!

Links & Recommended Reading

Program & Country Information

- Global Healthcare Technologies program page: <https://www.northwestern.edu/abroad/study-abroad/explore-programs/africa/global-healthcare-technologies.html>
- CIA World Factbook South Africa: <https://www.cia.gov/library/publications/resources/the-world-factbook/geos/sf.html>
- South Africa Online Travel Guide: www.southafrica-travel.net
- South Africa tourism site: <http://country.southafrica.net/country/us/en/>
- Cape Town and Western Cape tourism site: <http://goto.capetown/home>

Books

It's worth getting a good pocket guidebook to get you around South Africa, such as Lonely Planet, etc. Here are a few other recommendations:

- *Long Walk to Freedom*, Nelson Mandela: His autobiography, a must-read!
- *A History of South Africa*, Leonard Thompson: concise overview of a very complicated history!
- *Cry, the Beloved Country*, Alan Paton: a classic South African novel
- *Country of My Skull*, Antjie Krog: an Afrikaans perspective
- *The Kruger National Park: A Social and Political History*, Jane Carruthers
- *Dinner with Mugabe*, Heidi Holland
- *Of Wild Dogs*, Jane Taylor: murder mystery
- *Born a Crime*, Trevor Noah
- Anything by Nadine Gordimer or J.M. Coetzee, very famous South African novelists

Travel, Transportation & Entertainment

- Cape Winelands Tourism: <http://www.capewinelands.gov.za/SitePages/Cape%20Winelands%20Tourism.aspx>
- Movies: <http://www.moviesite.co.za>, <http://www.labia.co.za/>
- Cape Town: <https://www.capetownmagazine.com>
- Concerts: https://www.songkick.com/metro_areas/32788-south-africa-cape-town
- Train Schedules & Fares: www.metrotrain.co.za
- Kulula.com (low-cost airline): www.kulula.com
- Mango (low-cost airline): www.flymango.com
- Computicket (handy for booking busses and flights): <https://online.computicket.com/web/>
- Greyhound South Africa (low-cost bus service): <https://www.greyhound.co.za>
- INTERCAPE sleep-liner (low-cost bus service): <http://www.intercape.co.za/home/>

Organizations

- Africa Unite: <https://www.africaunite.org.za>
- Etafeni: <http://www.etafeni.org>
- Western Cape Rehabilitation Centre: <http://www.wcrc.co.za/>

Health & Safety

- US Department of State Country Information for South Africa: <https://travel.state.gov/content/travel/en/international-travel/International-Travel-Country-Information-Pages/SouthAfrica.html>
- World Health Organization: South Africa: <http://www.who.int/countries/zaf/en/>
- CDC: Health Information for South Africa: http://wwwnc.cdc.gov/travel/destinations/traveler/extended_student/south-africa
- Department of Health, Western Cape Government: <http://www.westerncape.gov.za/dept/health>
- GeoBlue Health Insurance: <https://www.geo-blue.com>
- Smart Traveler Enrollment Program: <https://step.state.gov/step/>

Appendix I: Cost Breakdown

GLOBAL HEALTHCARE TECHNOLOGIES (Stellenbosch, South Africa) WINTER QUARTER 2019 Program Cost Information

FEES CHARGED BY NORTHWESTERN	
PROGRAM FEE	
Tuition: \$15,320 The tuition fee covers all program expenses, including: <ul style="list-style-type: none"> lectures and instruction for four courses project facilitation, required equipment, and other support GeoBlue Health Insurance throughout the program period field visits and excursions to locations such as Cape Town, Johannesburg, and Kruger National Park, including all related travel costs 	\$18,040
Housing: \$2,600 The housing fee covers: <ul style="list-style-type: none"> lodging at the Concordia dormitory at Stellenbosch University accommodations in guest houses, hostels, or camps during field trips and excursions No meals are included; students are responsible for covering the costs of all meals.	
GeoBlue Health Insurance: \$120	
STUDY ABROAD ADMINISTRATIVE FEE	\$0
Students participating in this program are exempt from the Study Abroad Administrative Fee.	
TOTAL FEES CHARGED BY NORTHWESTERN	\$18,040

ESTIMATED ADDITIONAL COSTS	
International Airfare	
Students are responsible for making arrangements to fly in to Johannesburg, South Africa, and out of Cape Town, South Africa, on the dates provided. International airfares vary greatly based on the point of departure, carrier, and type of ticket purchased as well as volatility of airline industry pricing. Students may choose to take advantage of frequent flyer or other airline awards available to them, which could significantly lower their travel costs.	\$1,800
Books & Supplies	\$200
Discretionary Expenses	
Personal expenses vary based on individual spending habits and budgets. Discretionary expenses represent an average of the amounts reported by previous students and include meals, non-program transportation, and other incidentals. Students who plan to do personal travel outside of their program location should estimate an additional \$500-\$1,000. Please note that the program is quite busy and structured, so free time to pursue non-program activities is limited.	\$2,300
TOTAL ESTIMATED ADDITIONAL COSTS	\$4,300

TOTAL STUDENT BUDGET (Fees + Estimated Additional Costs)	\$22,340
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For more information about billing, finances, and financial aid for study abroad, please refer to the Money Matters section of the Study Abroad Guide or contact Krista Buda Bethel (krista@northwestern.edu) in the Financial Aid Office. Also refer to the Withdrawal Policies for Northwestern-Sponsored Programs for information about refunds in the case of withdrawal or dismissal.