Biophysical Field Methods in the Namib Desert

Gobabeb Namibia, 10-21 March 2016

אוניברסיטת בן-גוריון בנגב
Ben-Gurion University of the Negev

ESF
State University of New York
College of Environmental Science and Forestry

A joint field course of the Albert Katz International School for Desert Studies, Ben-Gurion University of the Negev and the School of Forestry and Environment, State University of New York

Biophysical Field Methods in the Namib Desert

Instructors:
Profs. Berry Pinshow (BGU), J. Scott Turner (SUNY ESF) and Dr. Eugene Marais (National Museum of Namibia)
Technician:
Stuart Summerfield (BGU)

Students:

Austin Dixon (BGU)	Hemanth Ramachandran (SUNY ESF)
Ibrahim Salman (BGU)	Irene Steves (BGU)
Elena Rogovin (BGU)	Meghan Rousseau (BGU)
Sarah Lynch (SUNY ESF)	Sean Cromwell (SUNY ESF)
Yaya Tang (HUJI)	Jessica Sack (NUST)
Angela Curtis (NUST)	Monja Gerber (NWU)
Immanuel Kapofi*	Martin Handjaba (NUST)

HUJI - Hebrew University, Jerusalem
NUST - Namibia University of Science and Technology
NWU - North-West University, Potchefstroom, South Africa
*Park Warden, Ministry of Environment and Tourism, Etosha National Park, Namibia

The objective of this hybrid online course and field workshop was to teach students how to address ecological questions using biophysical methods in the field. After the 14 participating students completed the online portion of the course, we spent 10 days at Gobabeb Research and Training Center doing field projects. The students worked in small teams and each team was instructed by one of the course teachers Each team summarized its project in a report in the form of a scientific paper. We hope that this album conveys the atmosphere of the course.

Berry Pinshow (Prof. Emeritus), Mitrani Department of Desert Ecology,
Jacob Blaustein Instititutes for Desert Research, BGU.

Arrival of the international contingent at Hosea Kutako International Airport on 10 March 2016

From Left to Right: Back Row - Hemanth Ramachandran and Ibrahim Salman
Front Row - Sarah Lynch, Irene Steves, Elena Rogovin, Austin Dixon, Sean Cromwell, Meghan Rousseau, Yaya Tang

On the bus trip from the airport to Gobabeb...

Baboon

Termite mounds

Warthog

GOBABEB

RESEARCH & TRAINING CENTRE

On day 1 of the course (11 March), we were introduced to the three major biotopes around Gobabeb. We began by crossing the Kuiseb river bed, where this picture was taken.

Berry Pinshow Scott Turner Eugene Marais

Dune grass

Three major biotopes are visible: gravel plains in the foreground, the Kuiseb river bed and the Namib-Naukluft dunes beyond.

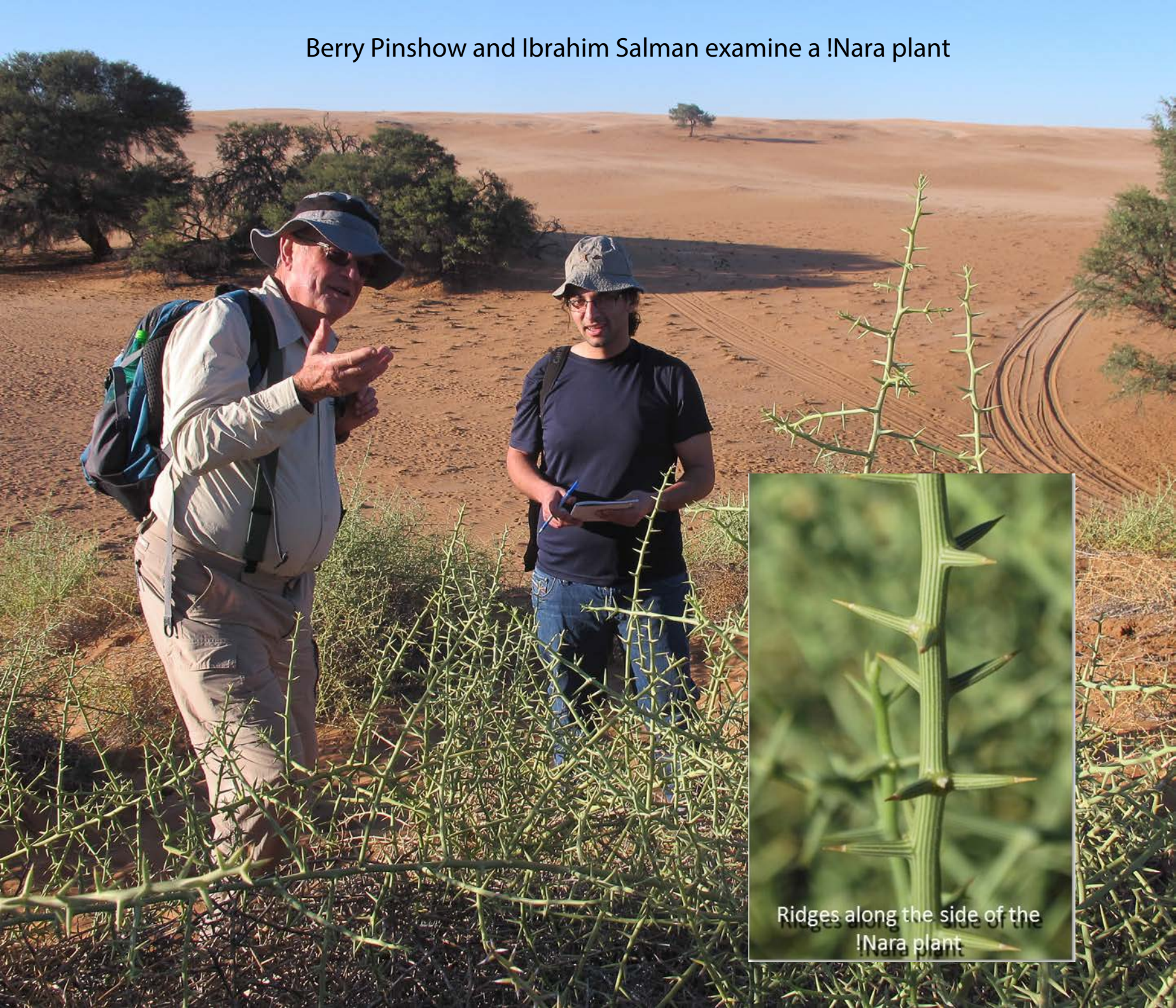
Faculty house at Gobabeb

Evening sky over gravel plains

Day 1: Eugene Marais introducing the students to the dune biotope

Tiffany Deater, SUNY visual arts student, making a video documentary

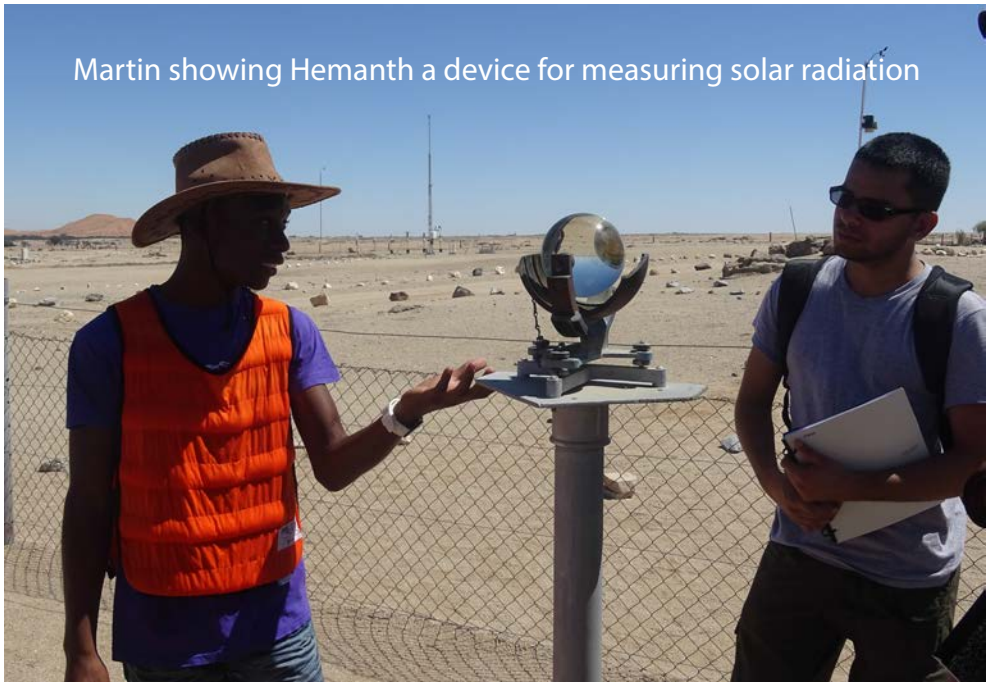
Berry Pinshow and Ibrahim Salman examine a !Nara plant



Immanuel Kapofi catches a lizard

Gobabeb's weather station has been collecting data continuously for the last 50+ years

Fog collection on dune grass



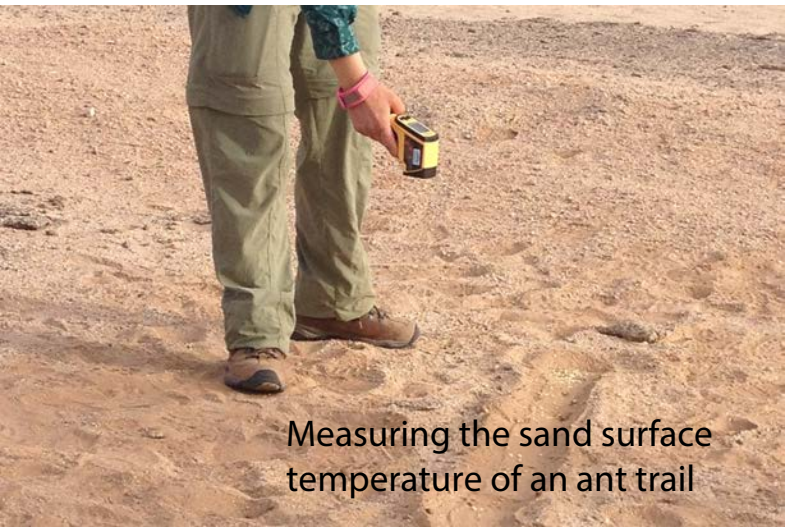
Martin showing Hemanth a device for measuring solar radiation

Scott Turner explains how the instruments and lab materials are used for field research

Day 2: A walk on a foggy morning out to the airstrip to see ant activity


Lost in a fog


Dew "capture" by leaf


Measuring the sand surface temperature of an ant trail


Angela Curtis


Waiting for the sun to come out


Lichen

Days 3-5: Project planning and data collection

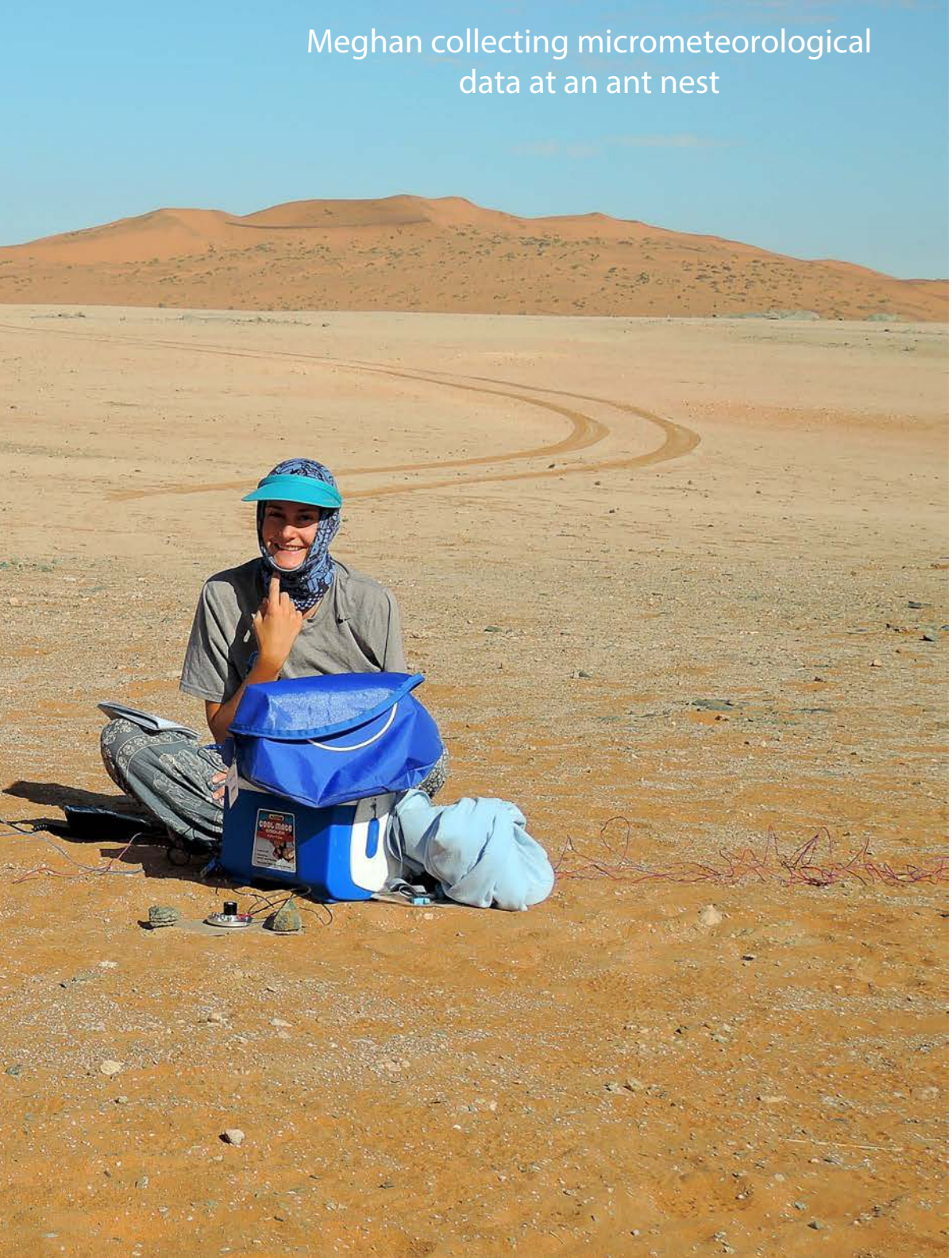
Groups discuss projects, and Austin gets ready to go into the field

Team Bats

Austin and Angela outside rock crevices used for studying bat roosting sites

Angela and Immanuel placing sensors under the exfoliated bark of a tree as part of the bat roosting project

Team Ants: Do ants walk faster in the sun?



Meghan collecting micrometeorological data at an ant nest

Hemanth filming ants walking, while Berry watches

Berry helps shade the ants

Team Golden Mole

A golden mole on Jessica's hand

Irene inserting thermocouples to measure the temperature at different depths within a spider burrow

Signs of a trapdoor; there is a spider underneath

Dancing White Lady spider (*Leucochestris arenicola*)

The silk from a burrow trap door

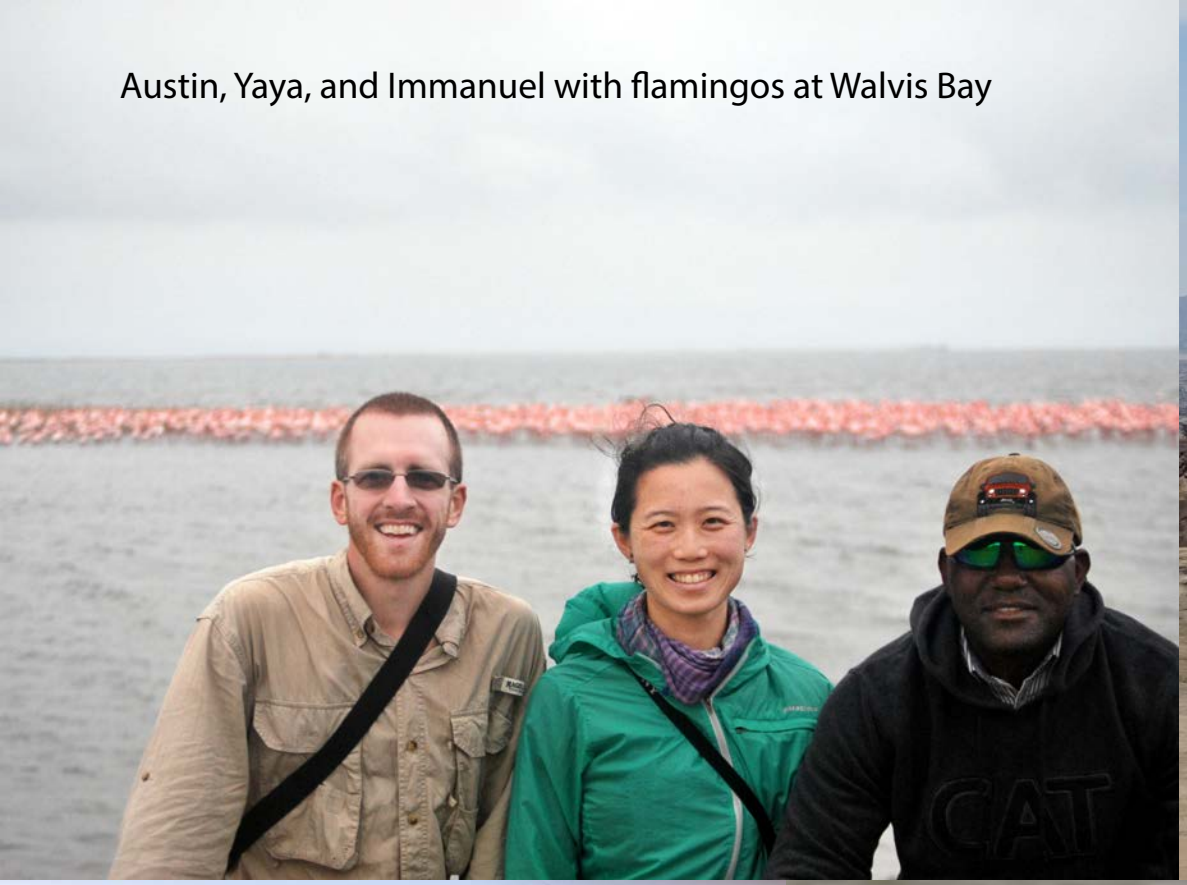
Team Spider and Scorpion Burrows

Eugene Marais talking about the history of the Topnaar tribe in the Kuiseb river bed

Church at Rooibank

Eugene explaining the geomorphology of the gravel plains

Immanuel and Monja in front of aTopnaar settlement



Austin, Yaya, and Immanuel with flamingos at Walvis Bay

"It's just like the Negev!"

Meghan and Irene

Lesser flamingos take flight

Welwitschia weevil (*Odontopus sexpunctatus*)

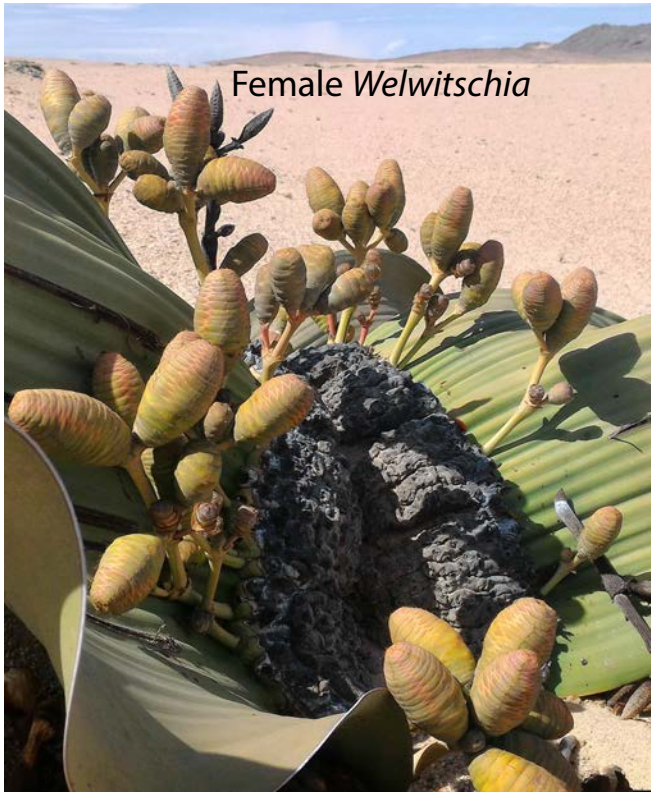
Meghan finds a small *Welwitschia* plant, perhaps just a few years old

Days 7-9: Field work continues

Male *Welwitschia mirabilis*

Team *Welwitschia*

Taking measurements



Female *Welwitschia*

A scorpion fluorescing under a UV light, while eating a cockroach

Martin dressed and ready to make burrow casts out of molten aluminum, which did not work

Pouring resin into the burrow

Relaxing while waiting for aluminum scraps to melt

Team Spiders and Scorpions prepare to make casts of some burrows


Once the resin is cured, time to start digging

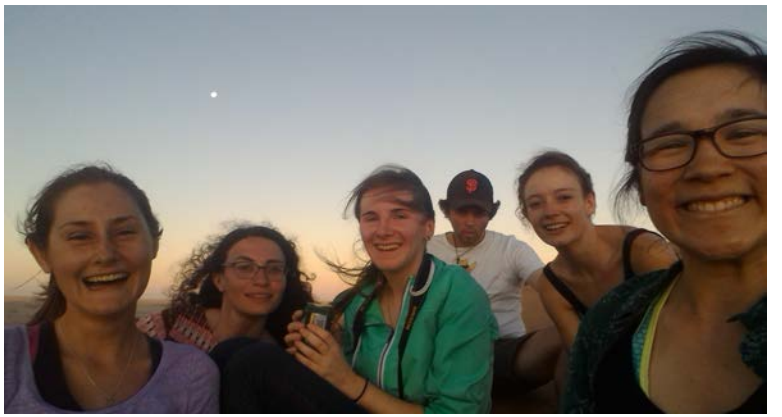

....and digging...


....and digging


with an amazing final result

At meals, students and teachers gather to eat and discuss the day's work

Day 10: Teams present preliminary results to course participants and visitors



...but before we leave, some fun on the dunes

All of us together on the last afternoon before leaving for home -20 March 2016

Back row: Sean Cromwell, Yaya Tang, Scott Turner, Gillian Maggs-Kölling (Director of Gobabeb). Middle row: Martin Handjaba, Sarah Lynch, Ibrahim Salman, Hemanth Ramachandran, Austin Dixon, Berry Pinshow. Front row: Tiffany Deater, Jessica Sack, Monja Gerber, Elena Rogovin, Meghan Rousseau, Irene Steves, Immanuel Kapofi, Angela Curtis. Eugene Marais


OLYMPUS

The BGU contingent, students and instructors, who attended this course was funded generously by The Sillins Family Foundation and the Office of the President of BGU. Without their sponsorship, this course could not have taken place.

This album was compiled by Yaya Tang from photographs taken by all the participants.