

The background is a vibrant yellow, densely populated with various colorful illustrations of microscopic organisms. These include green and blue amoebae, red and blue circular cells with internal structures, purple and orange elongated organisms, and green, blue, and orange worm-like creatures. The central text is contained within a large, dark purple, cloud-like shape.

MY MUM IS A PARASITE SCIENTIST

THAT'S RAD!

I would like to thank my family, friends, and colleagues for their support and for helping to make this book possible. I dedicate this book to my daughter Emma, my inspiration and sounding board, and to all children with a love of STEM!

Katherine Andrews

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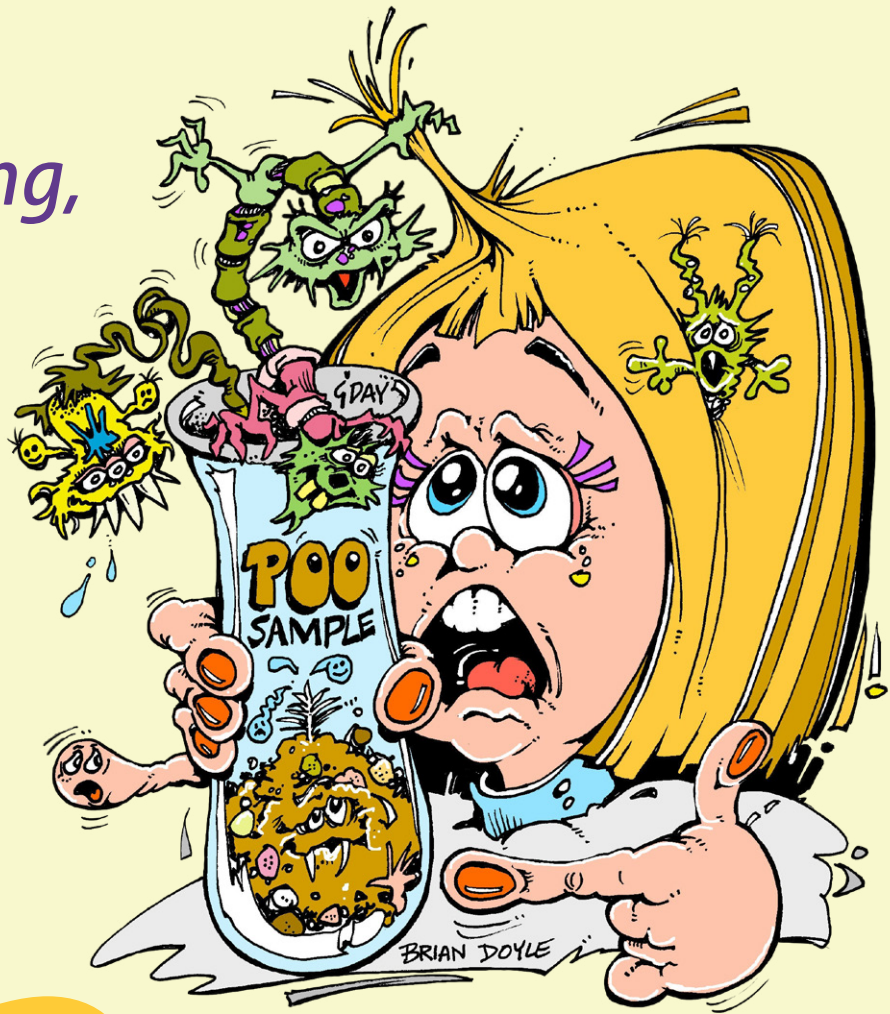
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A That's RAD! Science Book

My mum drives me **CRAZY** talking about weird
little creatures called **parasites!** Mum calls them
marvellous mini-microbes and says that some
parasites can even be found in **poo!**

I think that's
so *disgusting*,
but also kind of
cool.



WHAT IS A PARASITE?

A parasite is an organism that lives inside or on another organism, called the host. A parasite uses things from the host that it needs in order to grow and survive.



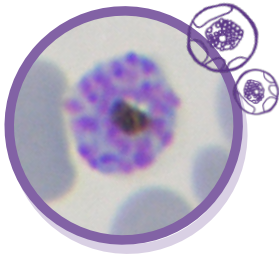
The reason my mum talks a lot about parasites and poo is because she is a **scientist**. Her job is to study parasites.

FAST FACT

A scientist who studies parasites is called a **parasitologist**. You sound it out like this:
par – a – si – tol – o – gist

Mum says that parasites are little creatures that you normally cannot see without using a special tool called a **microscope**.

Can you think of other living things that you might need a **microscope** to see?



Did you know?

Microscopes use magnifying lenses and light to allow you to look at small things that are not possible to see with your eyes. Some microscopes can magnify objects more than 1000 times their normal size!

Scientists can use microscopes to help identify different types of parasites.

FAST FACT

Parasites can be found on **every** continent of the world.

My mum told me that most people may not realise that parasites are a part of our **everyday lives**. Sometimes you might have parasites *living on you* too!



FAST FACT

Head lice are a type of parasite that live in hair. Head lice survive by sucking tiny amounts of **blood** from your head!

Lice are very common. Sometimes we get them in our hair. Did you know that head lice cannot fly or jump?

Adult head lice measure between 2-4 millimetres!





Parasites can also live on, or in, **plants**, animals or fish. My family has a **FAT** grey cat called Max. We make sure that he has no fleas, ticks or **worms** because they could make him **sick**. Fleas, ticks and some worms are types of parasites.



Pet parasites

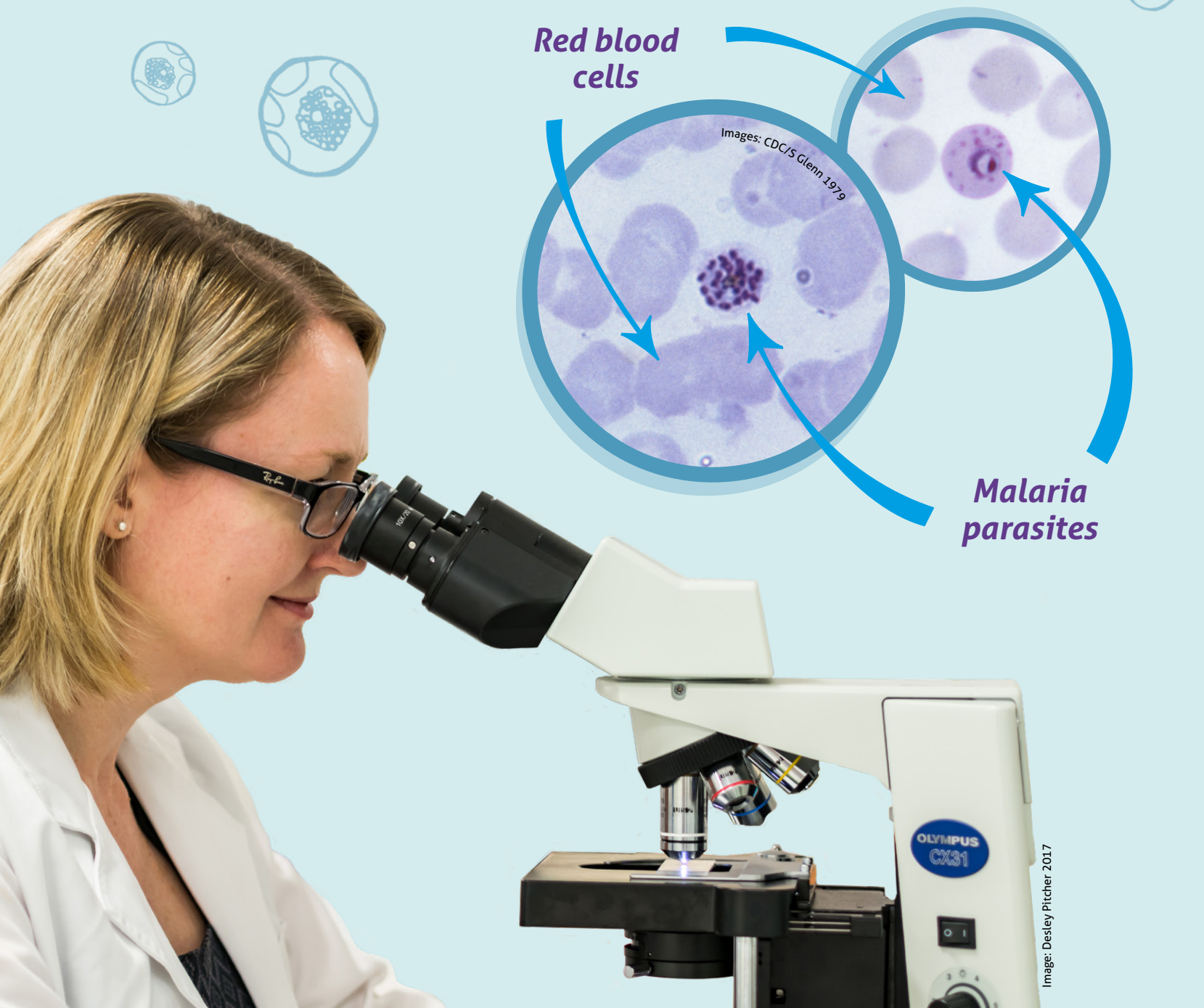
When you visit the vet with your pet ask if you can see some information about fleas, ticks or parasite worms. If you are lucky, the vet may even have one in a jar that you can look at!

Did you know?

Many museums display parasites in jars.

If you have a pet such as a cat or a dog, what treatment is given to them to prevent or treat parasites?

The type of parasites that my mum studies are called **malaria parasites**. For part of their life cycle, they live in **blood** cells! Malaria parasites can sometimes make people sick.



My mum and other **scientists** are trying to make new medicines to **kill** malaria parasites during different parts of their **life cycles**, including when they live in the blood.

Anopheles mosquito



Image: CDC/J. Gathany 2014

FAST FACT

People can be infected with malaria parasites by being bitten by the mosquitoes that carry them. Malaria is rare in Australia because the kinds of mosquitoes that carry malaria parasites do not live in most parts of Australia

When my mum is working with parasites, she wears a **lab coat**, **glasses** and **gloves**. She also washes her hands after working with parasites. This is to make sure that parasites cannot **infect** her and make her **sick**.



How do you think a lab coat, glasses and gloves protect scientists while they are working?

THERE ARE MANY DIFFERENT TYPES OF PARASITE SCIENTISTS

Can you match the different types of parasite scientist jobs with the picture?

Match the letter with the number.

A

Biomedical Scientist

Looking for new medicines to keep people healthy.

C

Wildlife Parasitologist

Working to protect animals in their natural environment.

B

Veterinary Parasitologist

Helping farmers make sure cows, sheep and other animals are healthy.

D

Fish Parasitologist

Studying parasites that make coral reef fish sick and making sure the fish we eat are safe.



Image: ©Queensland Museum, Gary Cranitch

1

Dr Robert Adlard



Image: Jessica Morgan, 2017

2

Dr Jessica Morgan



Image: Shutterstock

3

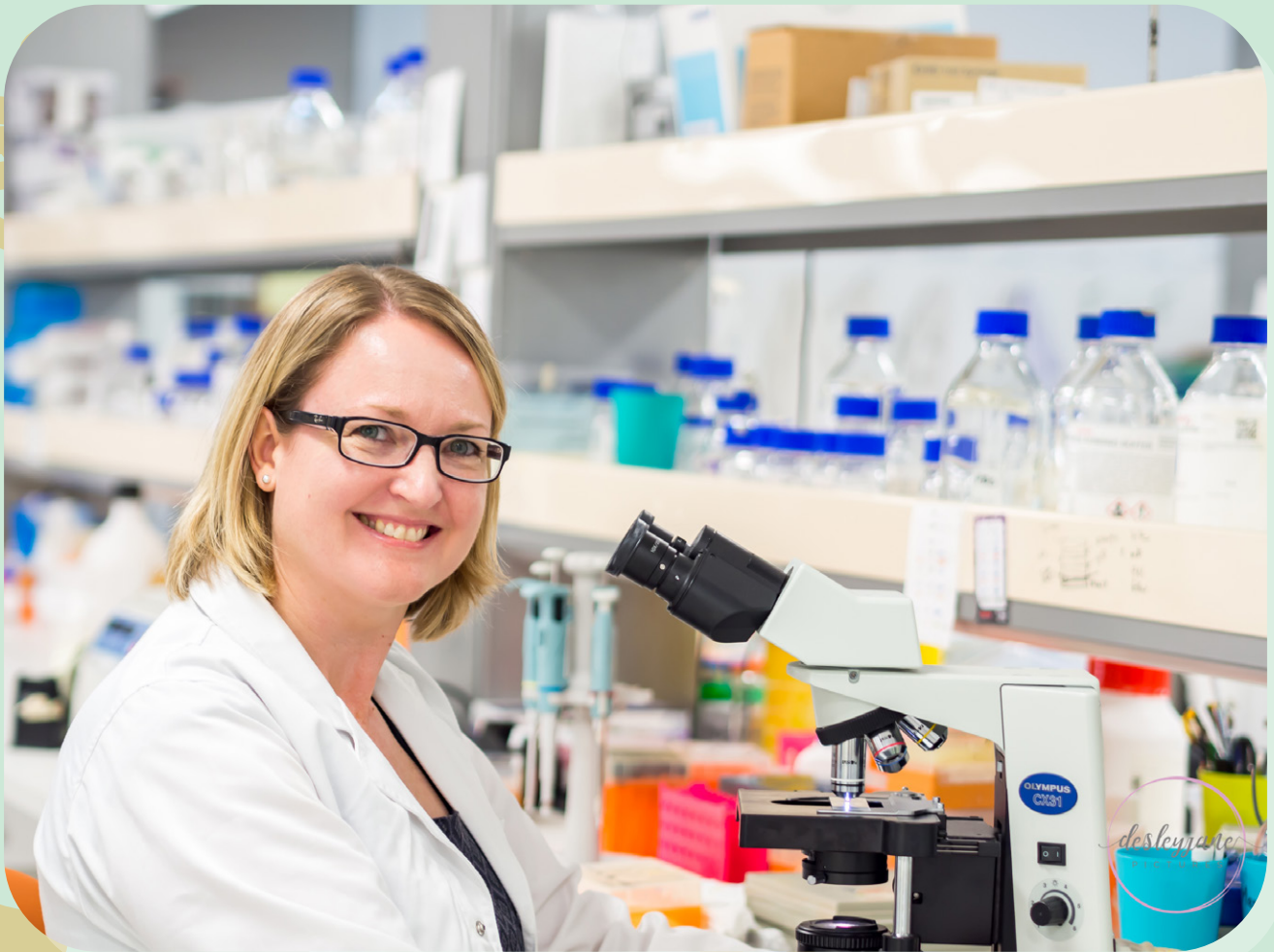


Image: ©Griffith University

4

Professor Katherine Andrews

I think it's very cool that
my mum is a parasite scientist
as long as she...



...doesn't talk about parasites found in ^{}}}}}}} smelly
poo or creepy **head lice** in front of my friends!



**THE
END...**

...almost. *For fun activities, keep reading.*



USE COLOURFUL CLAY TO MAKE YOUR OWN PARASITES

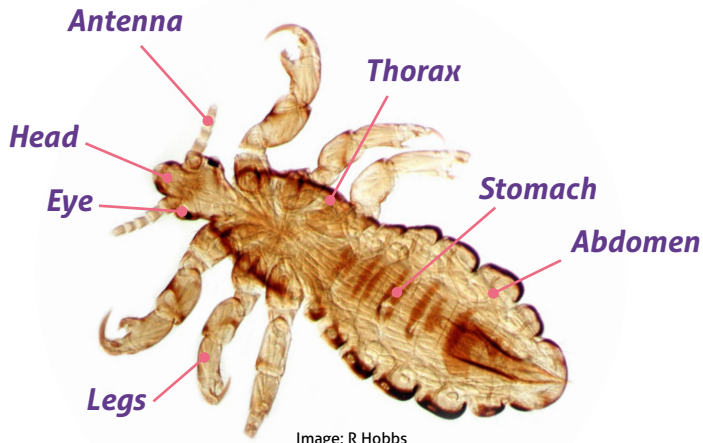


Image: R Hobbs
©Murdoch University 2007

HORRIBLE HEAD LICE

Head lice cannot jump or fly. They use their legs to crawl. Try using this picture as a guide to help you make, or draw, your own head louse.

What do you think each of the body parts are used for?



Liam
Age: 11



XAVIER
Age: 9

QUESTIONS TO THINK ABOUT

1. How do you think these different parasites move?
2. Do tapeworms, head lice and fleas live in the same place on humans or animals?

Head

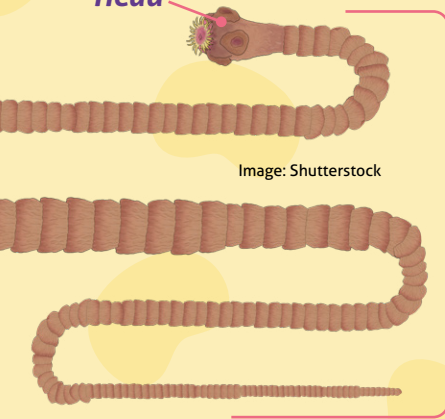


Image: Shutterstock

Body

TRICKY TAPEWORM

Tapeworms have a round head and a long and flat body. Tapeworms can grow to more than 1 metre long!

Can you make your worm that long?

Alice Age: 6



Evie
age: 9



Laura
Age: 10



Emma M
Age: 11



FANTASTIC FLEAS

Fleas cannot fly but they can jump! Adult fleas eat small amounts of blood.

Fleas are about 3 millimetres in size!

What do you think fleas use their claws for?

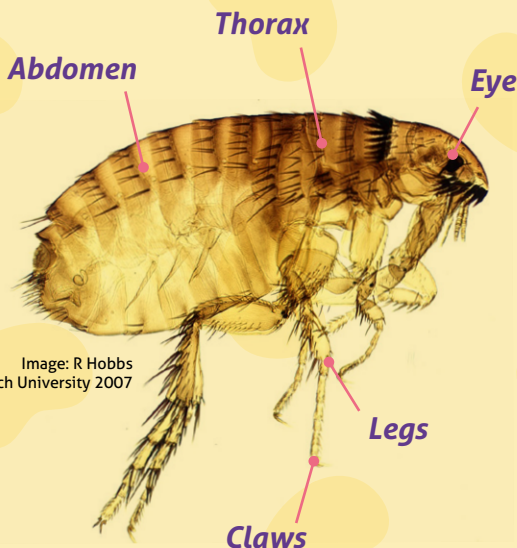


Image: R Hobbs
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QUIZ TIME

1 Are parasites *living* or *non-living*?

- A. Living
- B. Non-living

2 What kind of living things can parasites live *in* or *on*?

- A. Only people
- B. Only animals and fish
- C. Only plants
- D. People, animals, fish and plants

3 What do head lice *eat*?

- A. Skin
- B. Blood
- C. Hair
- D. Fairy bread

4 Where can you find *fleas*?

- A. Only on cats
- B. Only on dogs
- C. On cats, dogs and other animals

ANSWERS: 1. A, 2. D, 3. B, 4. C.



WORD WALL ART!

If there are words in this book that you do not understand, try making a **Word Wall**

- 1** Write the **word** on a sheet of paper.
- 2** Write the **meaning** of the word on the paper.
- 3** Draw a **picture** that shows the word's meaning.



A scientist is a person with knowledge or expertise in sciences like biology, chemistry, engineering or physics.

CLASSROOM TIP

Try working on different words in teams. Display the Word Wall Art so that everyone can see them and learn something new!

For educators and carers

Professor Donna Pendergast, Dr Mia O'Brien
and Associate Professor Georgina Barton

This book aligns with the Australian Curriculum area of Science and the General Capability of Creative and Critical Thinking.¹

The science curriculum is divided into three interrelated strands of science understanding, science as a human endeavour and science inquiry skills. The topics in this book are focused on the biological sciences and strongly encourage inquiry approaches to learning and teaching. It draws on the *Australian Curriculum: Science* key ideas through the “*development of concepts in the science understandings and, supporting key aspects of the science inquiry skills strand that contribute to developing students’ appreciation of the nature of science*”.

Curriculum concepts explored in this book include:

- encouraging children to respond to questions, make predictions and share observations;
- encouraging children to understand that parasites depend on their hosts for survival and that they live in specific places that meet their needs;
- encouraging children to observe and record different parts of parasites (e.g. head, legs) and to understand their use in the context of the environments they live in; and
- understanding that science and the outcomes of scientific research are used in everyday life (e.g. parasite control on pets, medicines etc.).

1 The Australian Curriculum, Assessment and Reporting Authority (ACARA)
www.australiancurriculum.edu.au



Image: ©Desley Pitcher 2017

A word from Professor Katherine Andrews

I really love my job and all the different things I get to do as a parasite scientist. It is fantastic to work with my team of scientists and student scientists to discover new things. It is also wonderful to be able to tell others about what we do.

When I asked my daughter and her netball friends what they would like to know about my job, this is what they asked me:

What is the most exciting part of your job?

Every day is exciting! Sometimes we discover something new that nobody else in the world knows about. It is really fantastic when we discover something that might one day be a new medicine for malaria.

How long does it take to become a scientist?"

You usually have to go to university and then gain some work experience. That part can be quite fun! I was able to work in a lab and carry out some interesting new experiments.

What made you want to write this book?

I love my job and think that parasites are so interesting and important. I wrote this book to share my love of parasites with children and to show them how amazing it is to have a job as scientist.



Cartoons by Brian Doyle



That's RAD! Science is a *Griffith University* initiative.



**Queensland
Government**



This book was generously supported by an *Advance Queensland* Engaging Science Grant from the Queensland Government and funding from the *Australian Society for Parasitology*.



This engaging and informative picture book will help children learn about different kinds of parasites and about what it is like to be a parasite scientist. The book includes interesting activities, funny cartoons and pictures of cool and creepy parasites!