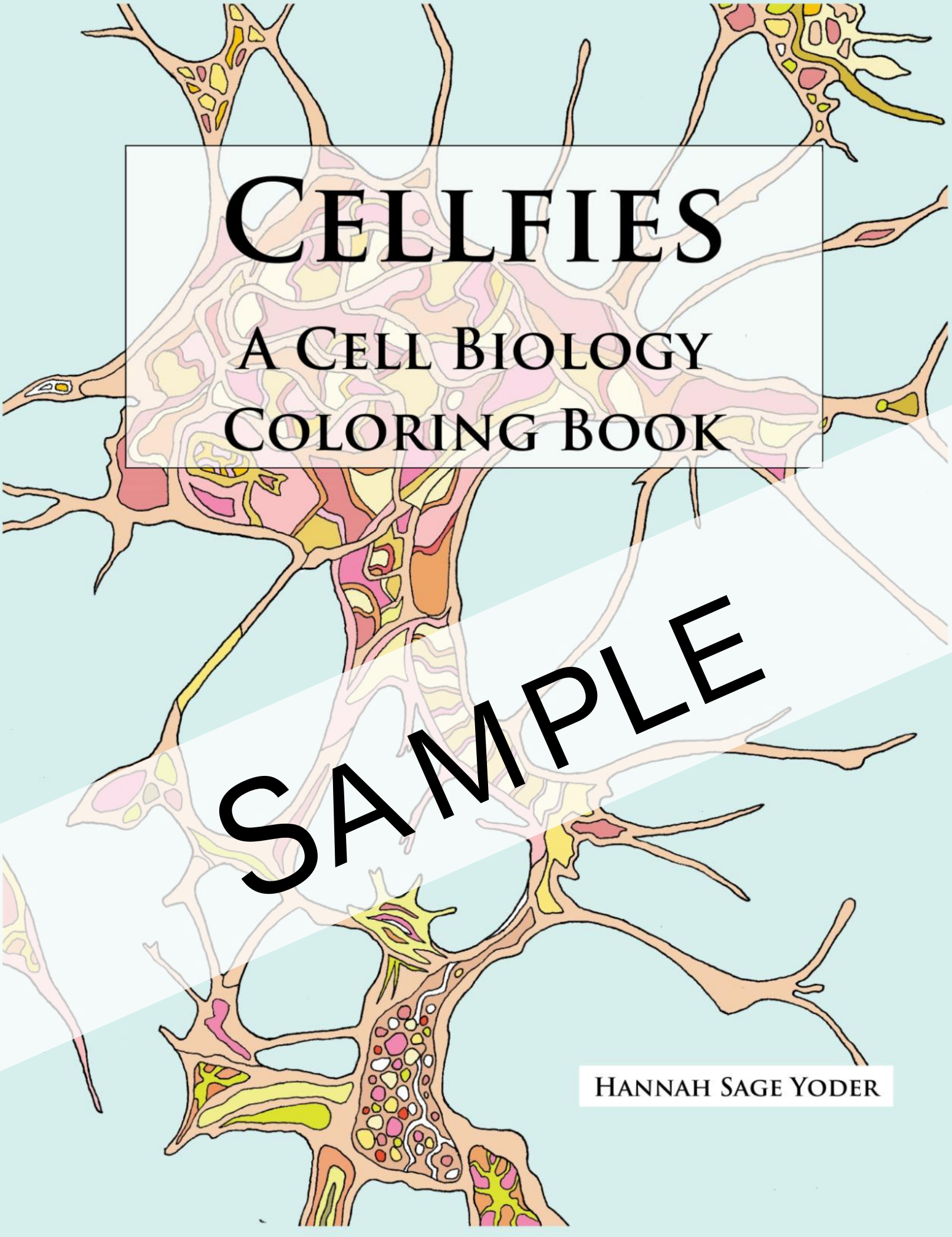

CELLFIES
A CELL BIOLOGY
COLORING BOOK
SAMPLE
HANNAH SAGE YODER

Introduction

All living things are made of cells. Cells come in many different sizes and shapes. They are the building blocks of all the different parts of our body. Although we can't see most cells with the naked eye, we can take photographs of them through a microscope. These photographs are known as *micrographs*.

Because cells can be difficult to see, even with a microscope, scientists have invented clever ways to expose their secrets, such as staining the DNA and proteins inside the cell with colorful, fluorescent, dyes. These dyes can reveal the location of the cell's command center, known as the *nucleus* (plural form, *nuclei*). They can also show the exact outline of the cell surface, called the cell *membrane*. These and other stains provide important clues about a cell's function, or what is wrong with a diseased cell. Micrographs prepared in this way are not only important for scientific research—they are also surprisingly beautiful!

In Parts 1-4 of this book, you will see the collection of micrographs that inspired the subsequent coloring designs. These images show cells that make up the eye, brain, and other organs, and even cancer cells. Each micrograph includes a brief description of the image. In some cases, there is an educational explanation of how such images are being used to advance scientific knowledge or develop treatments for disease.

The coloring pages were drawn by hand from observing the micrographs. If you look closely, you can see elements of the original images within each coloring design (see the footnotes). Some elements have been abstracted, combined or duplicated in order to make them more fun to color. Enjoy!

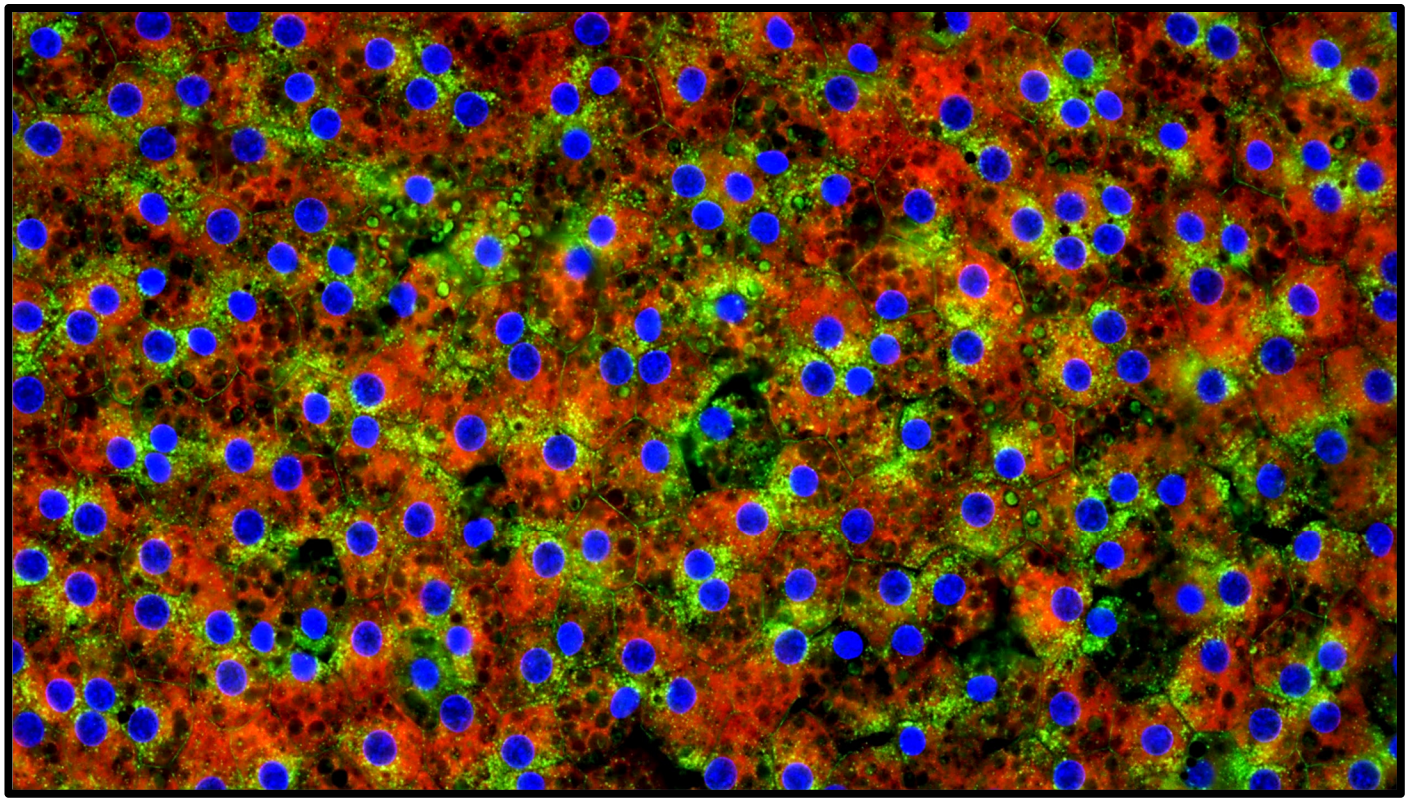
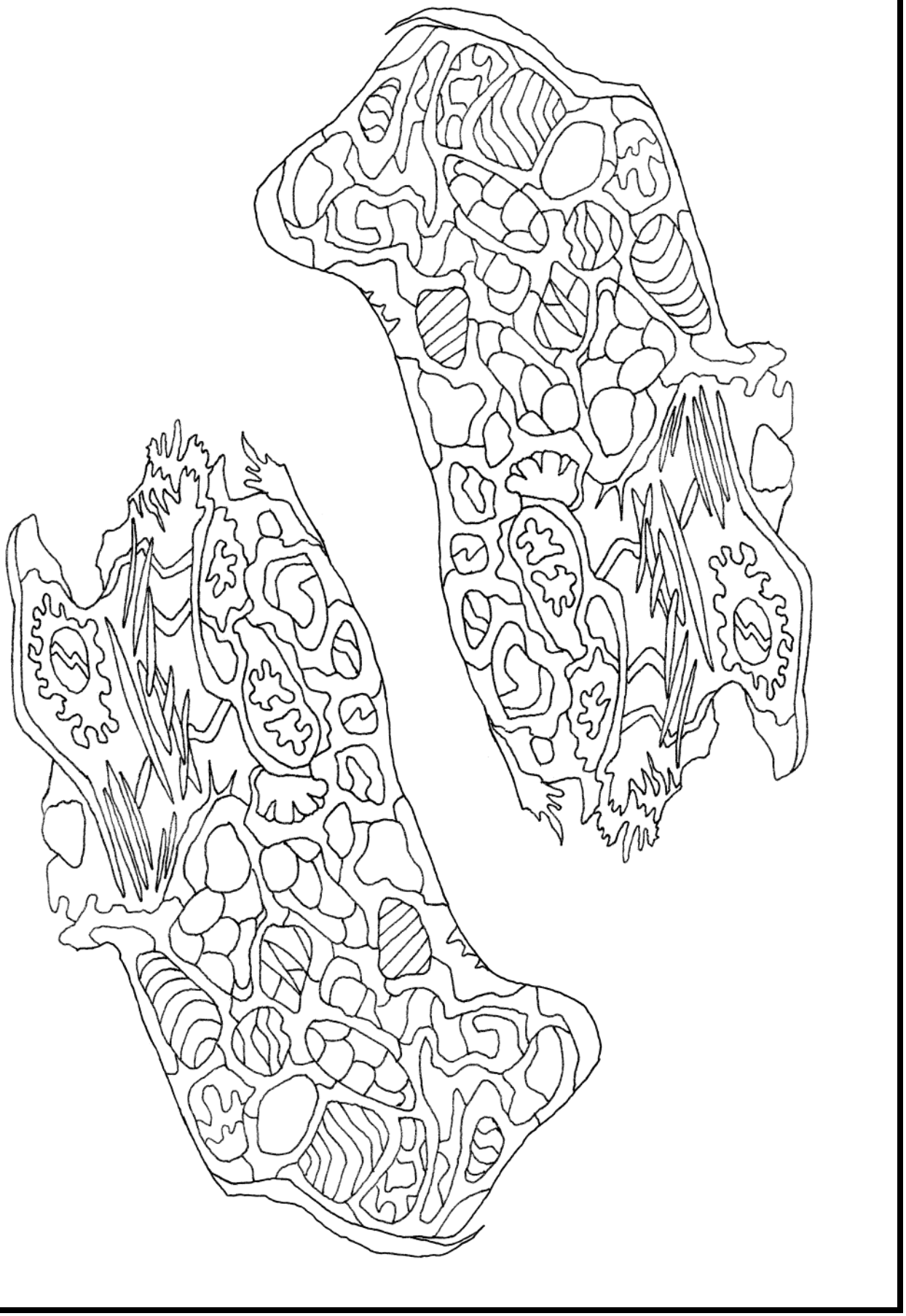


Image credit S. Nagar, PhD

This micrograph shows a layer of cells from the back of the eye, known as the *retina*.[2] The retina receives the light focused by the lens and sends the image to the brain. The nucleus of each cell can be seen as a bright blue dot. A protein that helps to maintain connections and communication between the individual cells is stained green.

The red stain reveals the presence of another protein that is a key player in Alzheimer's disease. Although this protein is normally found in many types of cells, its primary function is unknown. Studying the role this protein normally plays in the eye may help us better understand what goes wrong in Alzheimer's disease patients.

[2] See pg. 29 for the coloring sheet inspired by this micrograph



This isn't just a coloring book...

It's a Science-Art experience!

Dive into hidden microscopic worlds to explore the fascinating beauty of *cells*.

The coloring pages in this book were inspired by real microscope images donated by university professors doing modern medical research.

As you color, you will discover the amazing diversity of cells throughout the body, including the eye, brain, and intestine.

You will marvel at the intricacy of a single nerve cell and the complex layers of cells that form skin and other organs. You will even encounter the jagged outline of the cancer cell.

COLOR...
AND SEE BENEATH THE SURFACE.

A portion of the profits from the sale of this book will be donated to science education.