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Miscellany

The Joy of Discovery

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Abstract

The graphic novel *Joy of Discovery* (Maddison & Smith, in prep.) tells the story of 11 people who participated in a course at Oregon State University called Discovering Insect Species in the spring of 2015. The nine undergrad students, one graduate teaching assistant, and one professor formed a research team, went into the wilds of Oregon, and... discovered things. They made discoveries about biological diversity, as well as themselves; they discovered new friendships, and new paths in life.

Overview

The graphic novel *Joy of Discovery* (Maddison & Smith, in prep.) tells the story of 11 people who participated in a course at Oregon State University called Discovering Insect Species in the spring of 2015. The nine undergrad students, one graduate teaching assistant, and one professor formed a research team, went into the wilds of Oregon, and... discovered things. They made discoveries about biological diversity, as well as themselves; they discovered new friendships, and new paths in life.

The audience of the graphic novel includes high-school through college students interested in biology, and others interested in how we discover the species that live on Earth, and in the processes of exploratory science.

The graphic novel is a companion piece to the scientific paper that reports on the discoveries made by the class (Maddison et al., 2026).

The following pages (Fig. 1) include a portion of the Prologue of the graphic novel, as well as some example images and a very brief summary of the content.

In the full Prologue, we see the class at Klamath Marsh collecting beetles at night, and hear about the beetles they found there. The story then jumps back in time to tell how the course started, and the beginning days in the course. Early in the course the students are introduced to the evolutionary tree of life, and to beetles, in particular the group of ground beetles called *Bembidion* subgenus *Trepanedoris*. We follow the students through their field trips to collect *Trepanedoris* along the nearby Willamette River in Corvallis, Oregon, to Klamath Marsh, and eventually to Malheur National Wildlife Refuge. We experience their explorations under the microscope and in the lab as they sequenced the beetles' DNA. As part of the research team, they made more discoveries than we could have imagined, during which we see students experience the excitement of exploratory science.

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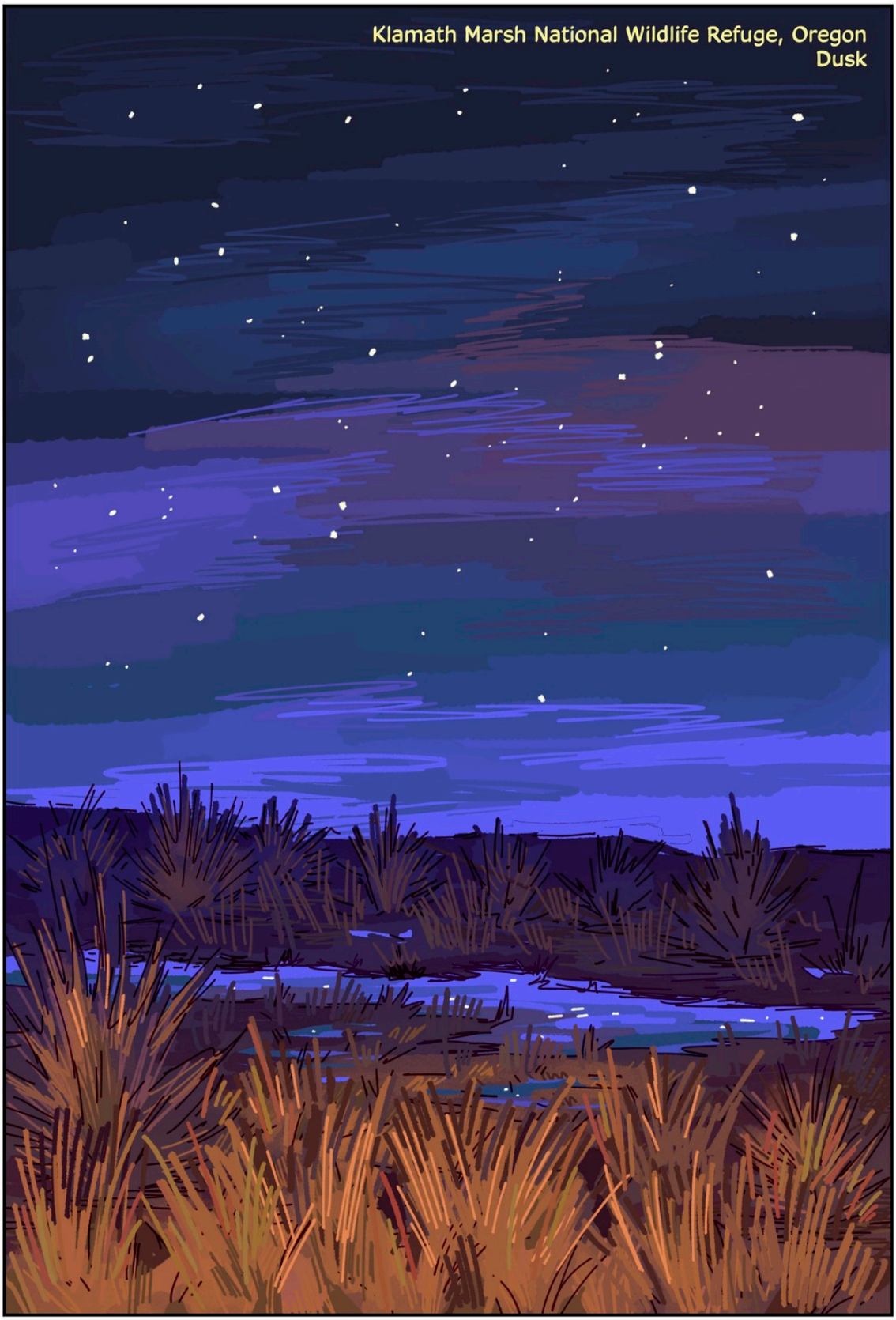
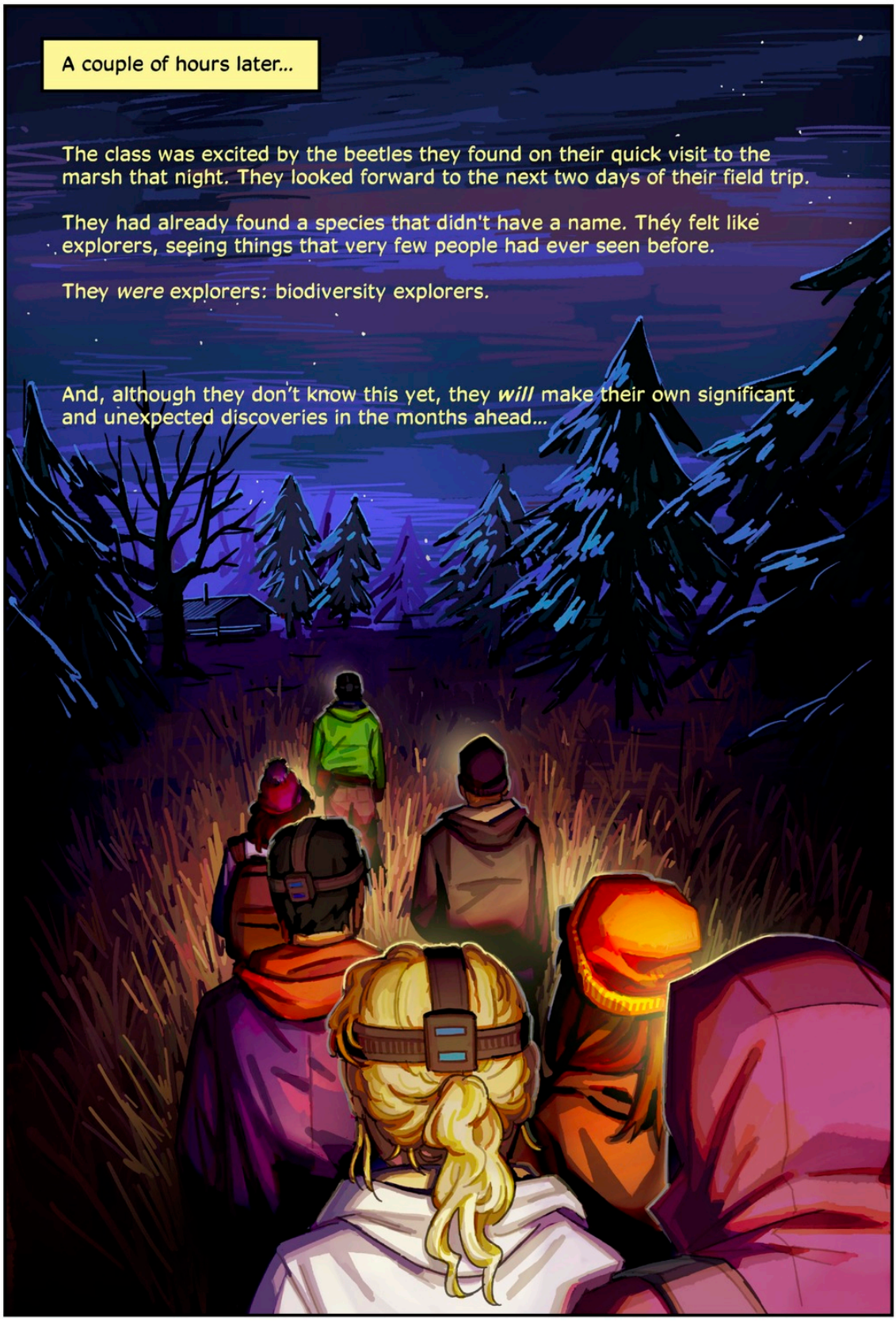
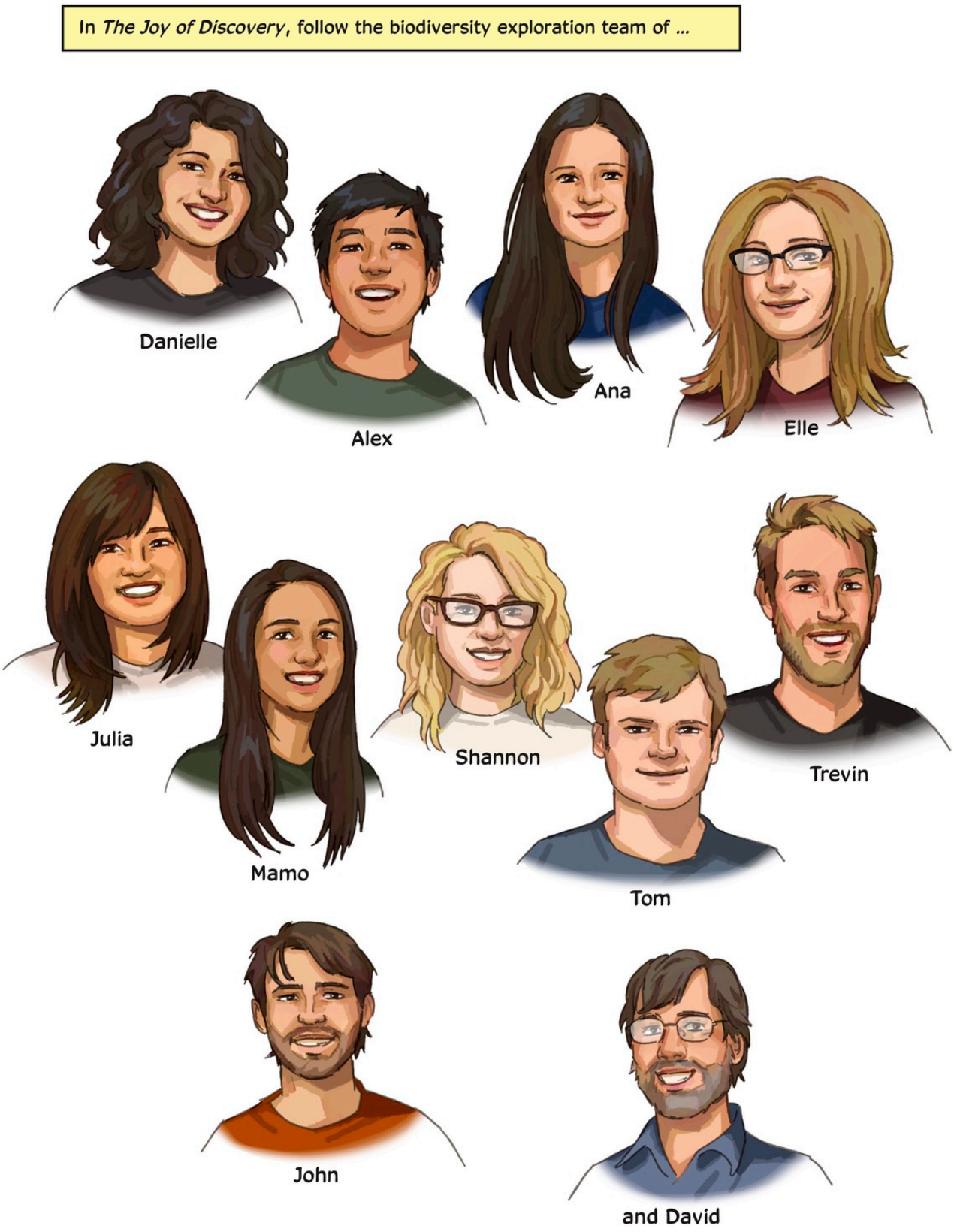

Klamath Marsh National Wildlife Refuge, Oregon
Dusk

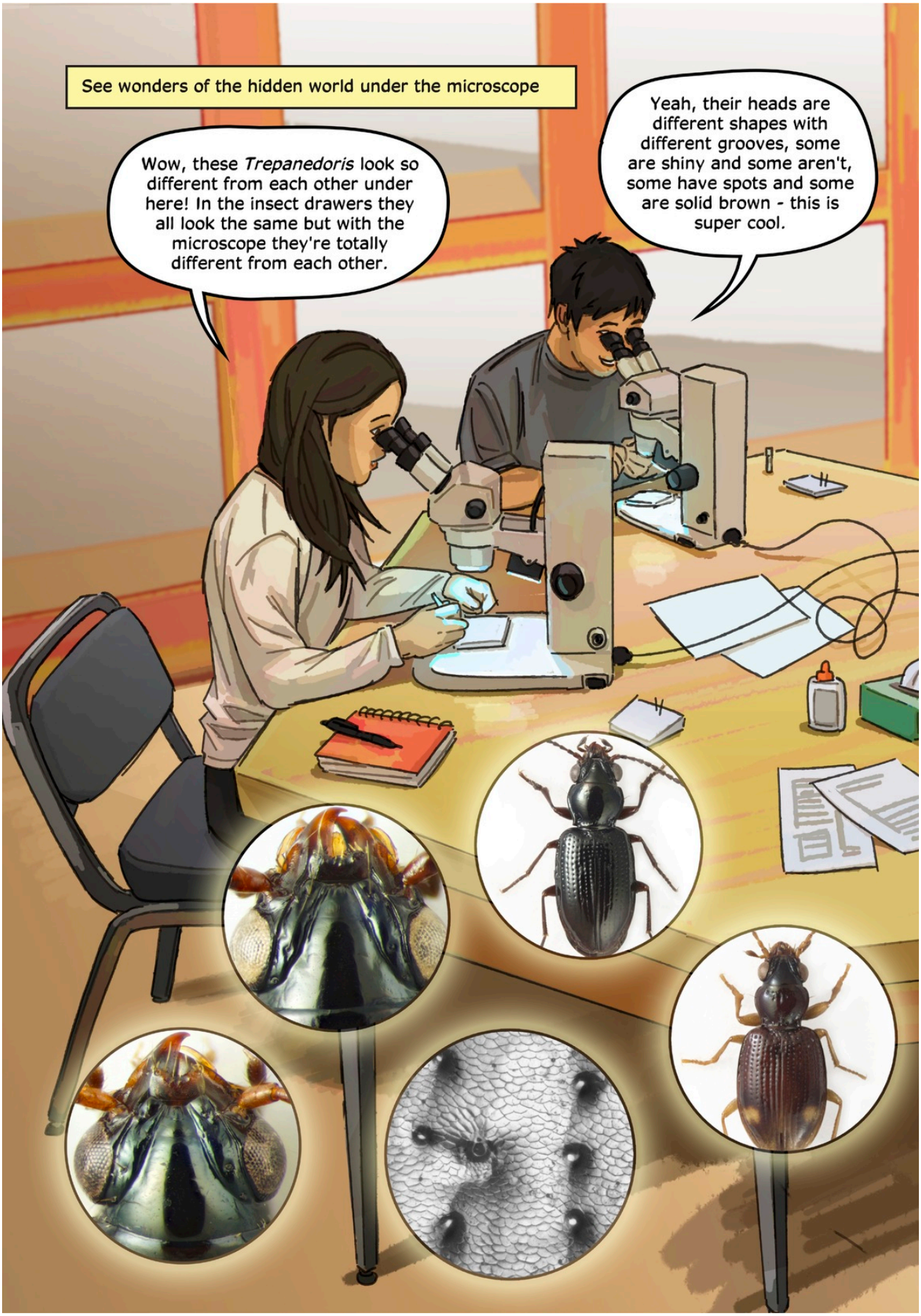

Oh!
Hey, everyone!
We found something
interesting!

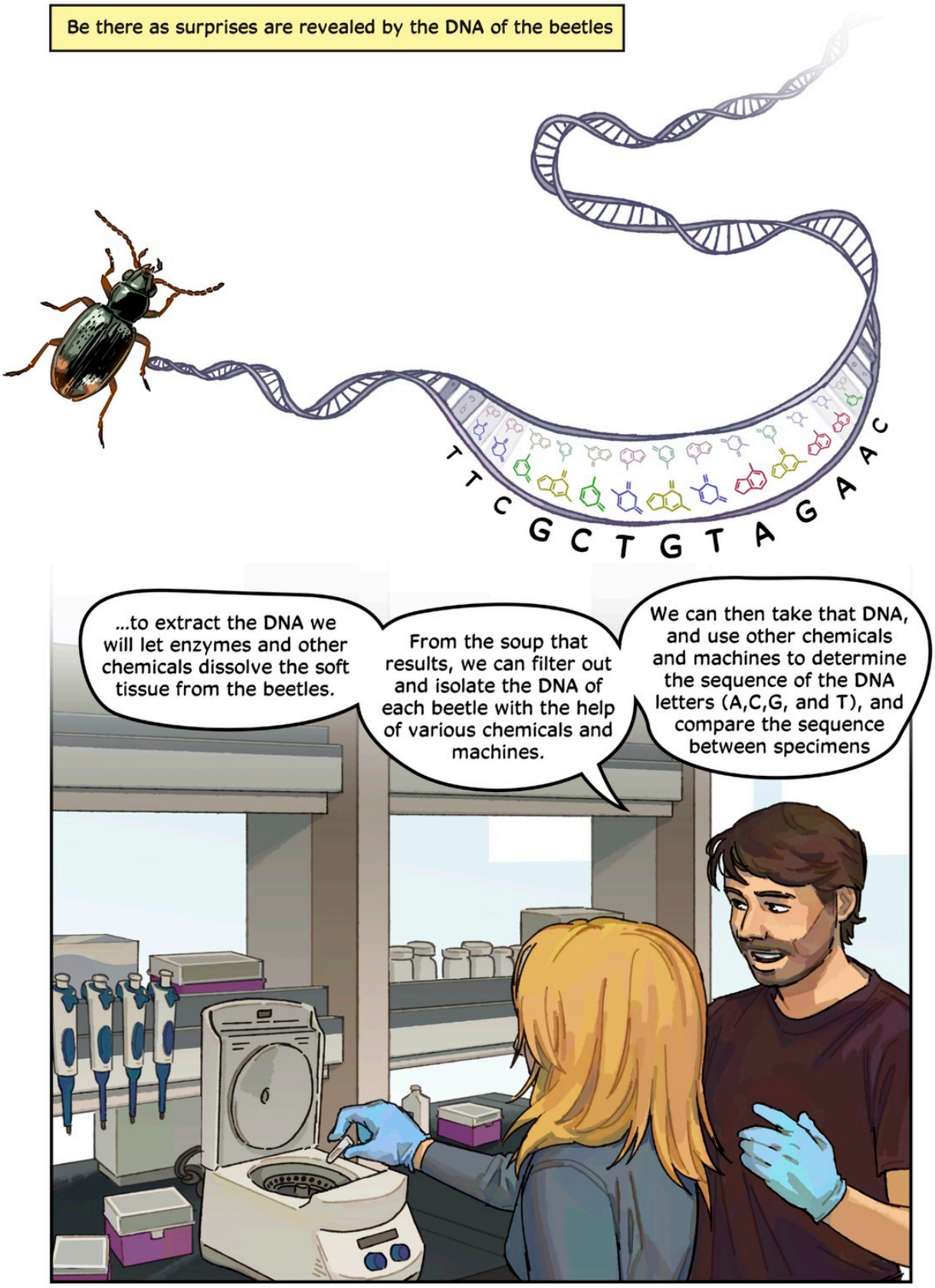

A couple of hours later...
The class was excited by the beetles they found on their quick visit to the marsh that night. They looked forward to the next two days of their field trip.
They had already found a species that didn't have a name. They felt like explorers, seeing things that very few people had ever seen before.
They *were* explorers: biodiversity explorers.
And, although they don't know this yet, they ***will*** make their own significant and unexpected discoveries in the months ahead...


A few weeks later, after studying the beetles they found ...
Amazing!
I can't believe we did that!
... and it wasn't what we thought after all!
And we discovered this ourselves!
Wow!


In *The Joy of Discovery*, follow the biodiversity exploration team of ...
Danielle
Alex
Ana
Elle
Julia
Mamo
Shannon
Trevin
Tom
John
and David


... into the wilds of Oregon
It's amazing to be here where life is actually happening. It's so much better than just hearing about it in class.
I know, right? And how cool is it that I can see these little *Bembidion* and know what they are!


See wonders of the hidden world under the microscope
Wow, these *Trepanedoris* look so different from each other under here! In the insect drawers they all look the same but with the microscope they're totally different from each other.
Yeah, their heads are different shapes with different grooves, some are shiny and some aren't, some have spots and some are solid brown - this is super cool.


Be there as surprises are revealed by the DNA of the beetles
T T C G C T G T A G A A C
...to extract the DNA we will let enzymes and other chemicals dissolve the soft tissue from the beetles.
From the soup that results, we can filter out and isolate the DNA of each beetle with the help of various chemicals and machines.
We can then take that DNA, and use other chemicals and machines to determine the sequence of the DNA letters (A,C,G, and T), and compare the sequence between specimens

References

Maddison, D. R., & Smith, A. O. (in preparation). *The Joy of Discovery*.

Maddison, D. R., Sproul, J. S., Mendez, D. L., Vasconcelos, A. C., Martin, L. A., & Week, T. S. L. (2026). Species discovery and delimitation in ground beetles of the subgenus Trepanedoris (Coleoptera: Carabidae: Bembidion). *Bulletin of the Society of Systematic Biologists*, *5*, 1. https://doi.org/10.18061/bssb.6996