

# PRIONS



EMILY SCHLESINGER

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# COWS GONE MAD

It was 1984. Something strange was happening in England. Cows were acting weird. It started with cow number 133. She lived on Peter Stent's farm. Her eyes got a wild look. She began running in circles. Her legs kicked and thrashed. A trembling took over her body. More cows started acting the same way.

The farmer did not know what was going on. He sent for a **veterinarian**. The doctor had no clue. Soon the cows all died.



England's government grew worried. An **autopsy** was done on one cow. Doctors looked into its **skull**. They found something surprising. The animal's brain had many holes. It looked like a sponge. This was a new disease.



Scientists gave it a name. This was bovine spongiform encephalopathy. But the public called it mad cow disease. It threatened the country's beef. People were scared. The government stepped up. An order was made. It was to kill more than four million cows. Officials wanted to stop the disease. They hoped killing the cows would put an end to it.

Bovine spongiform encephalopathy under a microscope

⚡  
**Fast Fact**

*Bovine* means having to do with cows. *Spongiform* signifies something that is full of holes, like a sponge. *Encephalopathy* indicates a disease that attacks the brain.



Ten years passed. It was 1994. Stephen Churchill was a student. Churchill lived in England. He hoped to join the Royal Air Force. His future looked bright. Then he started having dizzy spells. His grades fell. He could not walk straight. His mind wandered. Churchill passed away one year later.

Another case came soon after. This was also a young man in England. He was a vegetarian. But he had liked beef as a child. He had eaten it for many years. Time passed. Then the man's body started to shake. Soon he could not walk. He could not talk. The man died in two years.



Brain sample of mad cow disease

Then came 1995. A young woman lived in northern England. She worked in a butcher shop. Her memory suddenly started to slip. She forgot who she was. Her moods grew violent. She had to be locked in her home. The woman passed away within a year.

More cases followed. Most of the victims were young. They seemed healthy. Then something changed. Their moods shifted. They could no longer walk or talk. Tasks became hard. They soon passed away. Scientists looked at victims' brains. All showed the same thing. Their brains had turned to sponge.

Scientists looked for a link. It took time. They found it. The cause was sick cows. People ate **tainted** beef in the 1980s. Years passed. They got a human form of the illness. This is called Creutzfeldt-Jakob disease. It is CJD for short.

Why did it take so long to spread? This was no ordinary disease. A **virus** did not cause it. There were no **bacteria**. Instead, the cause was a **prion**. This is a kind of **protein**. It is not alive. But it acts like it is. A prion cannot reproduce. But it can make other proteins act just like it. In this way, it spreads throughout the entire **nervous system**.



### Fast Fact

Some call prions “zombie proteins.” Like a zombie, a prion feeds on the brains of the living. The protein passes its behavior on to others. Harmless proteins turn into killers. Soon there is a whole army of them.

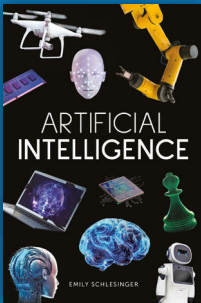




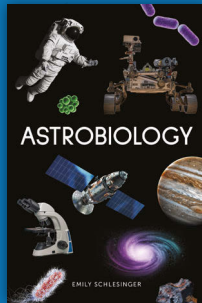


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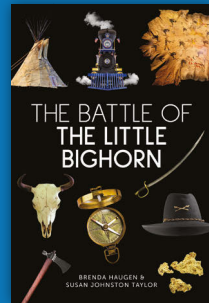
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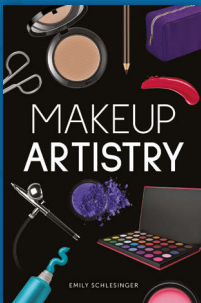
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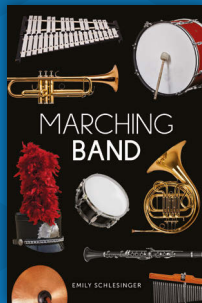
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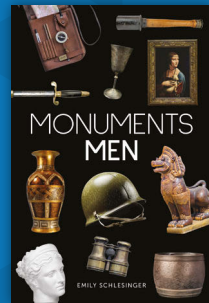
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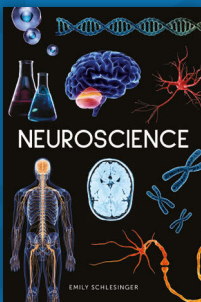
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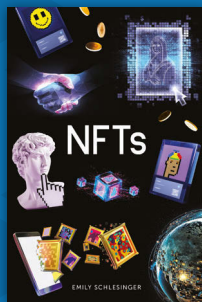
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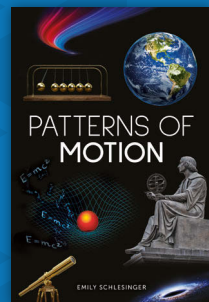
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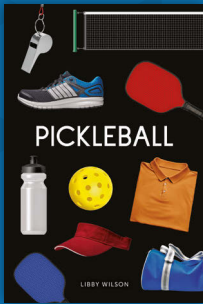
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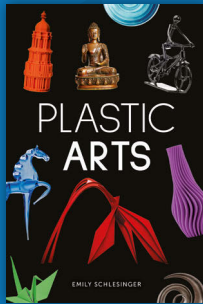
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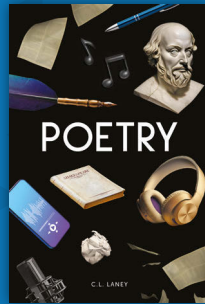
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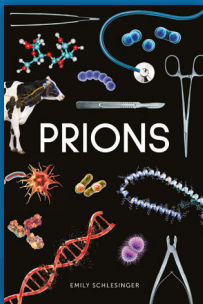
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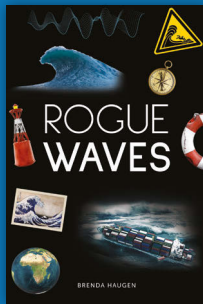
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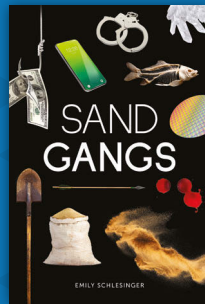
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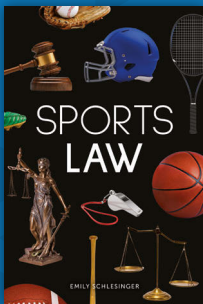
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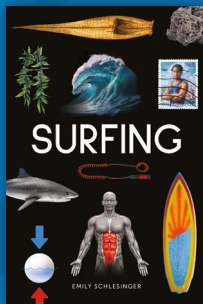
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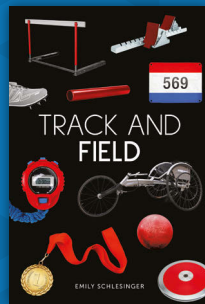
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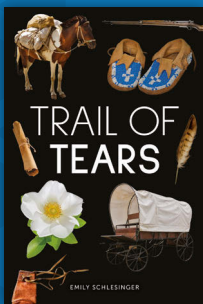
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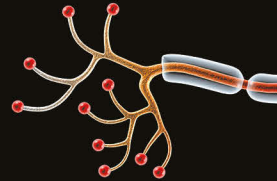
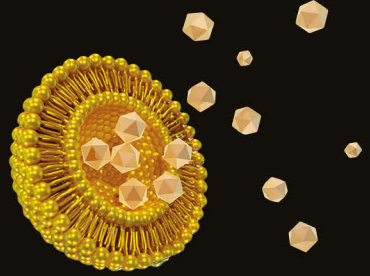
SCIENCE

# PRIONS

Cows shake uncontrollably and later die. Sheep scratch at their fur until there are only patches left. People laugh one minute and become violent the next. These are all signs of brain diseases caused by prions. Scientists worldwide are searching for ways to stop these deadly proteins from replicating and spreading throughout the body.



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