



SOUND SCIENCE:
JENNY SEAGRAVES

SCIENCE & TECHNOLOGY



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SCIENCE STARTS WITH IMAGINATION

Energy Factor asked ExxonMobil scientists about why they are drawn to the world of science and why they think the scientific process is essential in solving the world's (energy) challenges.

(Click on the audio buttons throughout to hear their stories in their own words.)

Born in Hong Kong, Jenny Seagraves moved to the United States with her family when she was 8 and soon set off on a path of scientific discovery.

A first-generation college graduate, Jenny's spark for science came when reading the book "Black Holes and Warped Time Space" by William Kaufmann as a teenager. She read it cover to cover and found the cornerstone from which to build her scientific pursuit: imagination.



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**Jenny Seagraves, age 8,
with her brother outside
her home in Hong Kong.**

Jenny became a lifelong learner, gravitating to a world of challenging questions where she and her team oversee an emerging technology that helps remove hydrogen sulfide (an impurity that smells like rotten eggs) from natural gas with less energy and fewer emissions.

Unlocking those answers is a meticulous process, and incremental success only comes through testing, retesting – and retesting. And while the scientific method requires methodical evaluation and observation, expanding new understanding of the world from the lab requires imagination.

In chemistry, scientists can't actually see how molecules interact with each other because everything is at the atomic level. Instead, they have to infer, visualize or imagine those reactions. Answers only come after testing.



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Jenny, her team and their colleagues at BASF spent almost four years screening the right combination of molecules they needed to develop OASE® Sulfexx™ – a new technology to efficiently remove hydrogen sulfide from natural gas streams.



Workspace inspiration from Jenny's daughter, Bethany (who signed this piece inside the tiger stripes).

They started with more than 100 different molecules and screened them for unique properties. The top candidates were synthesized and then tested in the lab. Ultimately, after diligently evaluating the behavior of each molecular candidate, the team zeroed in on three leading options. From there, the team has worked to scale its findings into commercial testing.



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Putting one foot in front of the other isn't flashy. Constructing, then eliminating, hundreds of scenarios is painstaking. Remaining diligent through an elaborate maze can be frustrating. But Jenny starts her mornings with an early-morning swim, a cup of coffee and a mind full of things she wants to accomplish.

She relies on her team to keep her grounded in what the science is telling her, not what she wants the science to tell her.

For Jenny and her team, creativity starts when individuals are willing to set aside biases to solve problems in a different way. Innovation happens when the team collaborates to imagine a better solution.

And breakthrough innovation requires breakthrough imagination.

Each one of us has our own ideas on what we think will work. However, we have to set aside our biases to look at the facts objectively. But when we disagree, I can look at the people on my team and know we are working toward the same goal. Having that support and being able to talk through problems is what drives our success.

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