

Studying the Effectiveness of RNA Riboswitches

SF

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A Genetic “Light Switch” Can Help Solve Many Problems



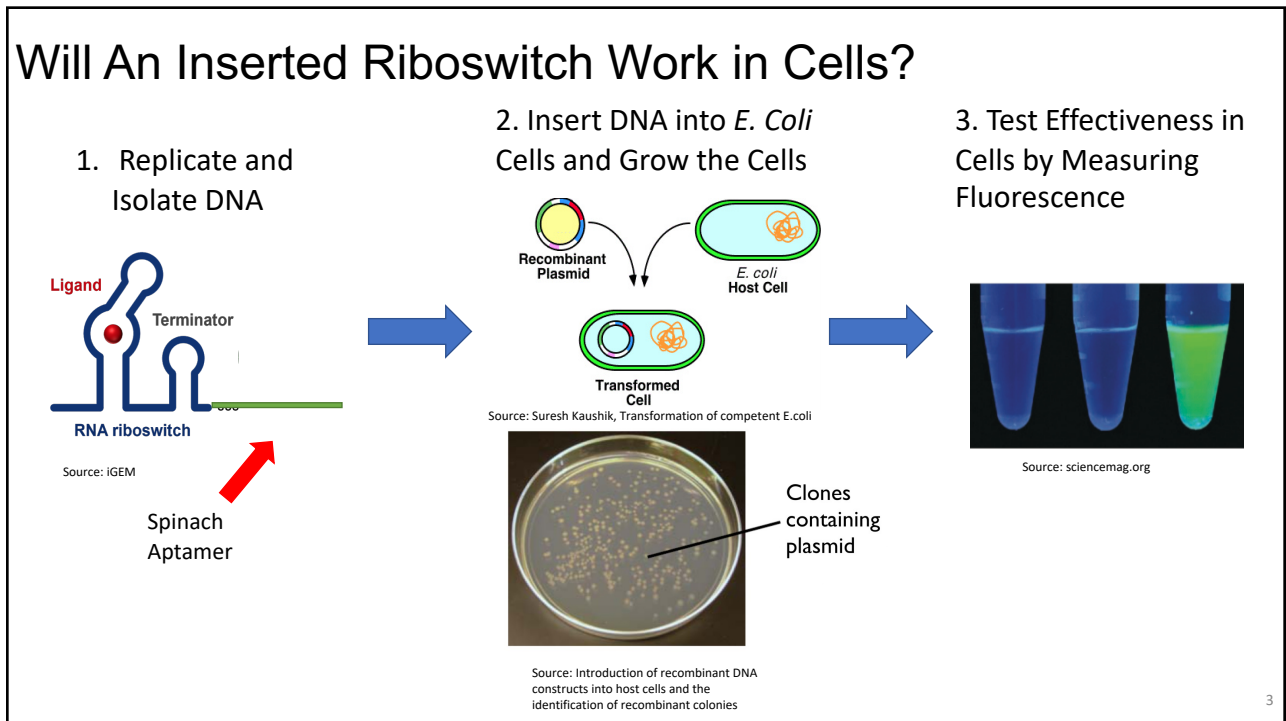
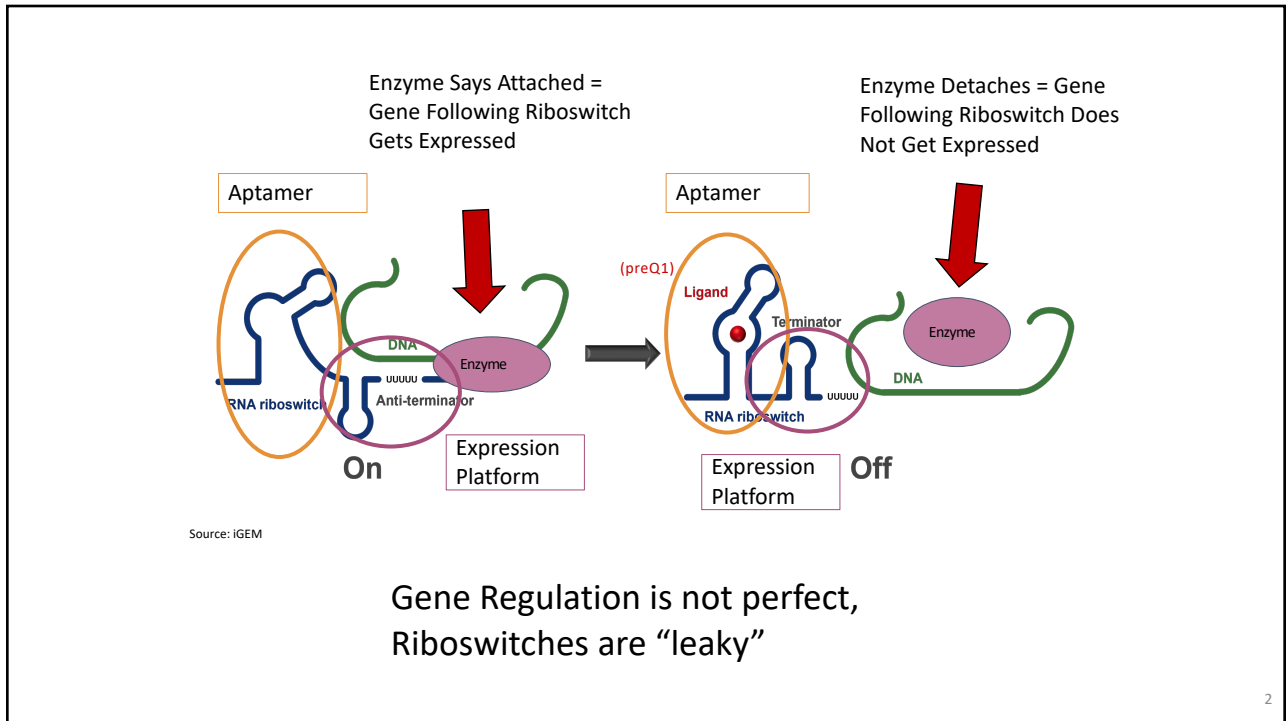
Source: Gluten Free Living



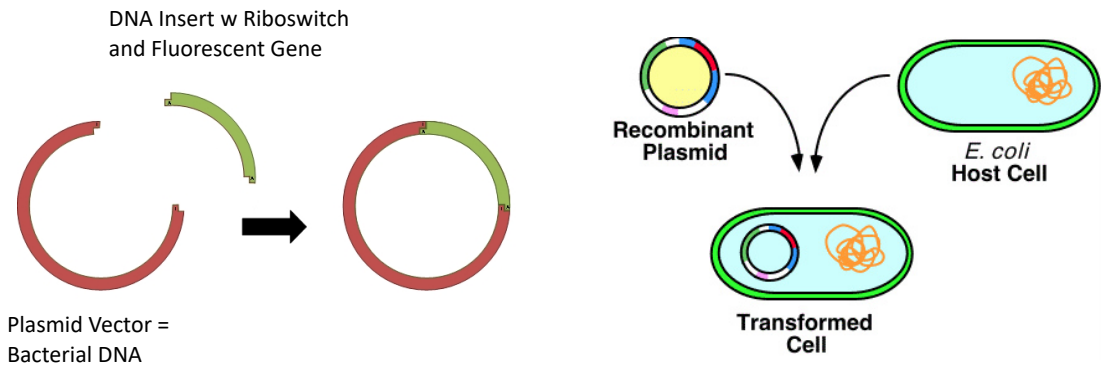
Source: Cnet



Source: ethanbeute



E. coli Will be Transformed to Test Riboswitches *in Vivo*

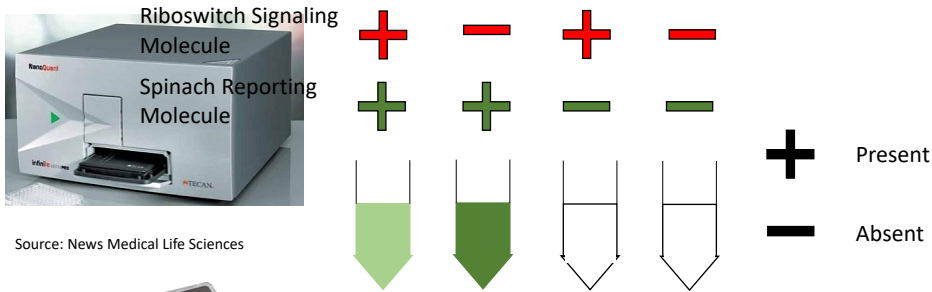


Source: The University of Queensland

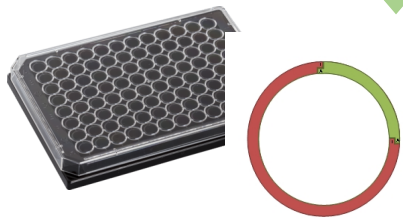
Image courtesy of Suresh Kaushik, Transformation of competent *E. coli*

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Fluorescence Will Be Measured to Test the Effectiveness of the Riboswitch

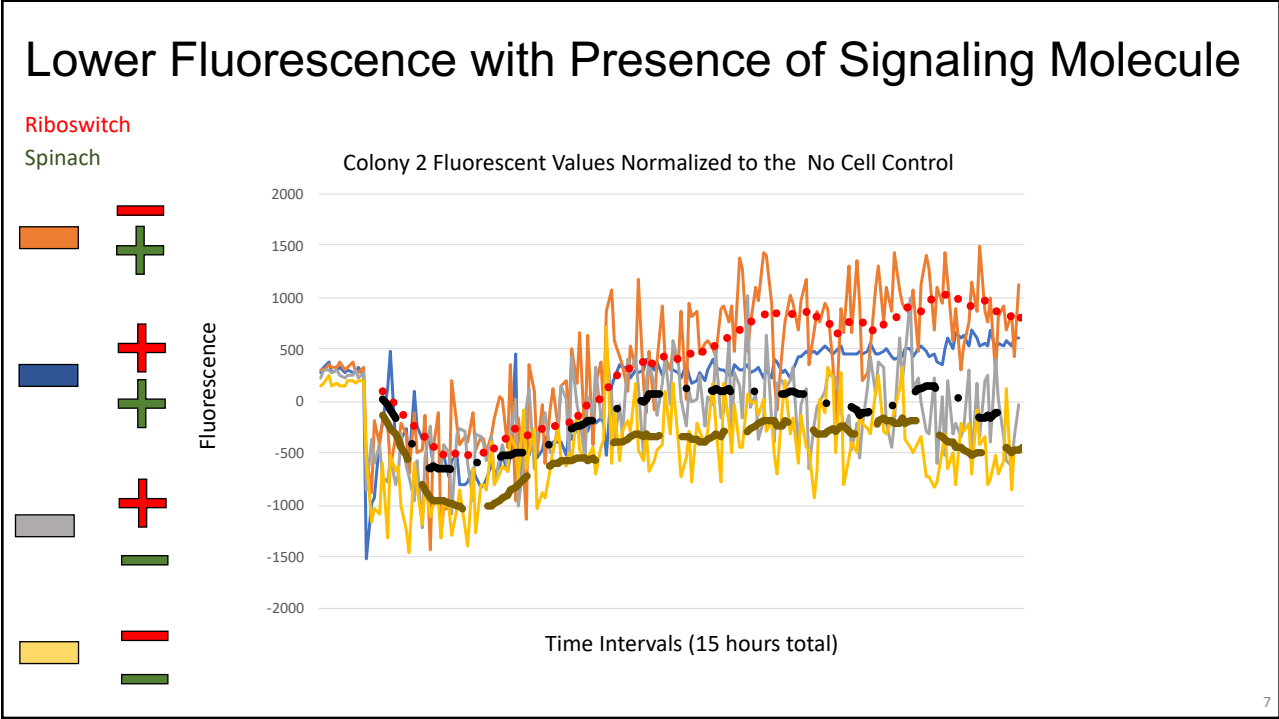
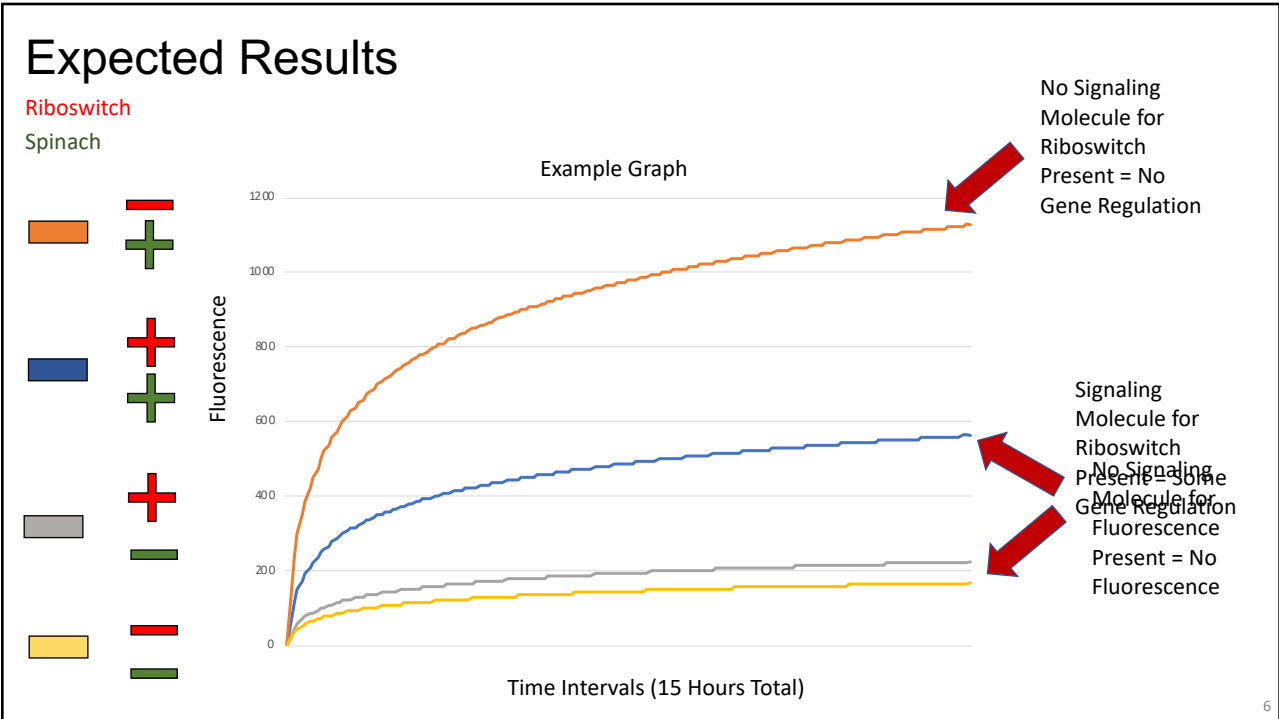


Source: News Medical Life Sciences



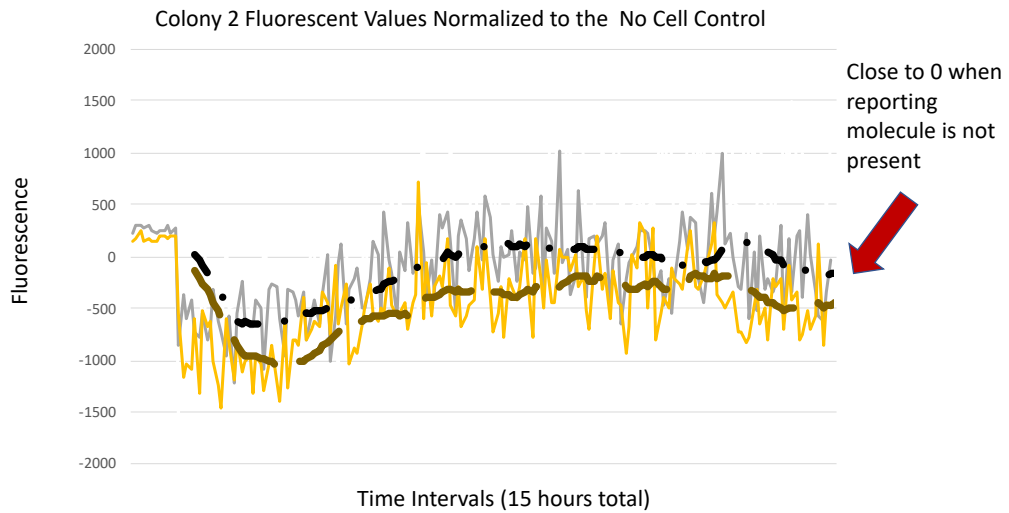
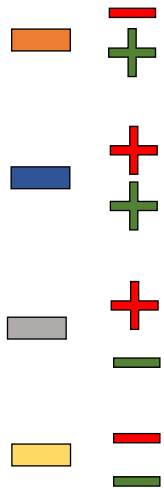
Source: Sarstedt

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Lower Fluorescence with Presence of Signaling Molecule

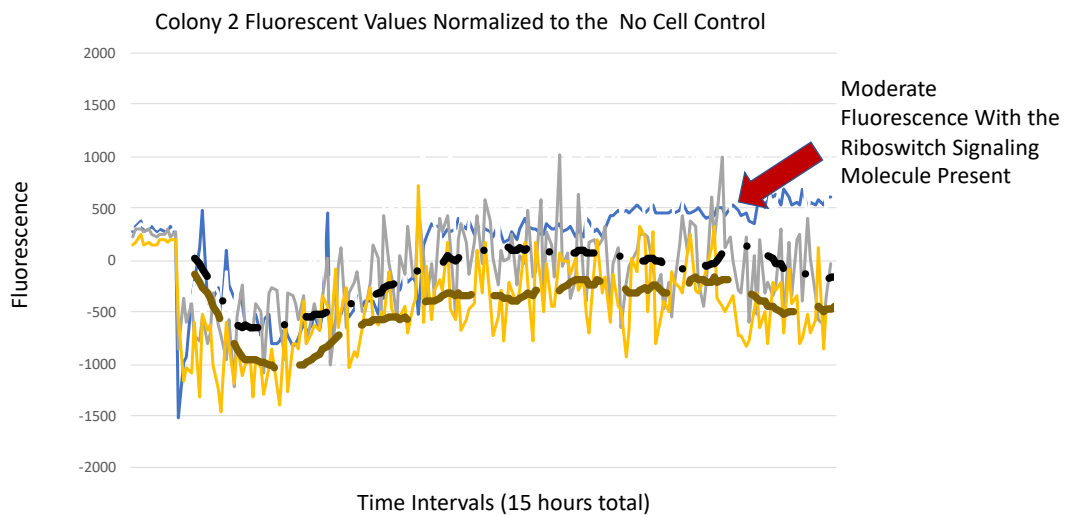
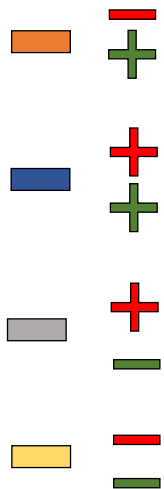
Riboswitch
Spinach



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Lower Fluorescence with Presence of Signaling Molecule

Riboswitch
Spinach

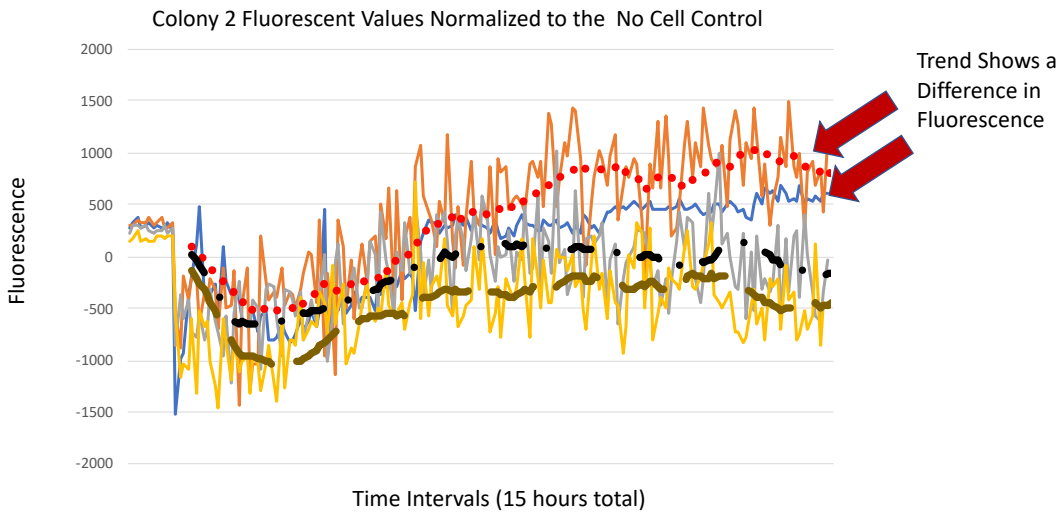
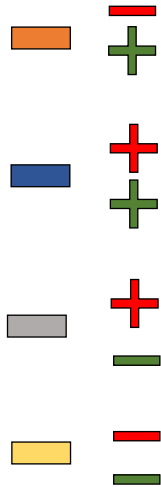


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Lower Fluorescence with Presence of Signaling Molecule

Riboswitch

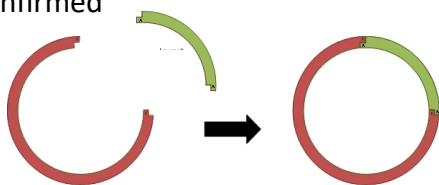
Spinach



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Results Show a Good Start to Developing an Effective Assay

DNA Insert w Riboswitch and Fluorescent Gene was Confirmed



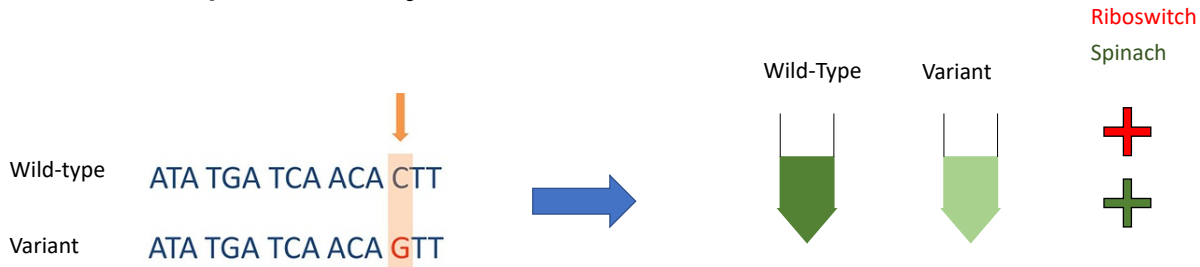
Tecan was Confirmed to Work with Cells



What I learned: Science does not go as planned and success can rest in the details

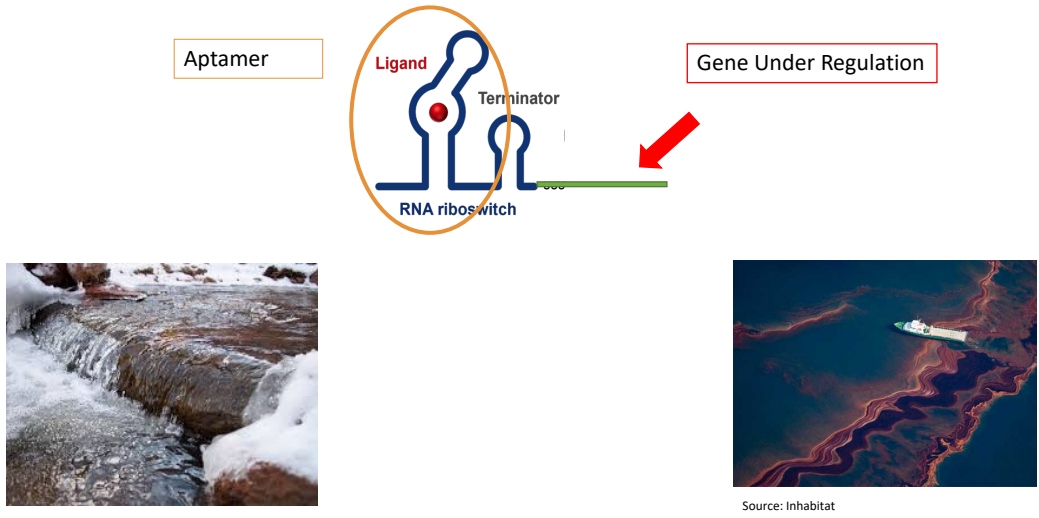
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Testing the Effectiveness of Riboswitch Variants Using the Developed Assay



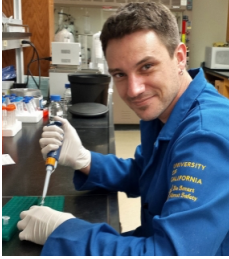
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Changing Aptamers and Genes Expands Applications

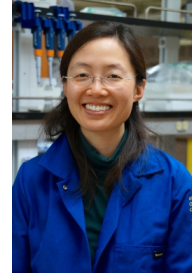


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Acknowledgments



Gregory Campbell



Dr. Irene Chen



CSEP Staff
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Jin