CENTER FOR RNA BIOMEDICINE

What if we could customize medical therapies to treat degenerative diseases at an individualized, genetic level, without harsh side effects or loss of efficacy, that could be ready in a matter of months instead of years?

At the **University of Michigan Center for RNA Biomedicine and RNA Therapeutics**, our goal is to do just that.

Most drug therapies available today target broad cellular processes in a non-specific manner, which can effectively augment disease course, but may also elicit deleterious effects on normal cellular function, resulting in unwanted, sometimes severe, side-effects, and declining efficacy over time. Instead, **we are pursuing the root cause of disease by targeting specific ribonucleic acids (RNAs) for treating these illnesses**. In doing so, and by creating drugs personalized at the genetic level and tailored to the specific person, we can create a treatment that has the potential to be safer for the patient, and more effective as well.

U-M's Center for RNA Biomedicine is a leading, and overall the largest, RNA research community in the world. With over 170 faculty affiliates and their labs across U-M's seven schools and colleges, together we research, use, and develop cutting-edge technologies in our work towards treatments for the most devastating diseases facing humanity. Additionally, we have the facilities to provide on-site clinical trials, dramatically increasing the potential for curing disease as we can quickly move from bedside to research lab, and back to bedside.

Genetic diseases like cancer, Alzheimer's, and other illnesses are often devastating to people and families, sometimes with little regard for previous good health, age, or will. Although vastly different, these diseases above have two commonalities: they are all life-impairing or life-threatening, and they are all grounded in RNA biology. Additionally, **they are all being challenged by some of the world's top scientists, physicians, and engineers at the Center for RNA Biomedicine.**

Our passion in the RNA Center is exploring the fundamental biology of information passing from DNA, to RNA, to protein and how RNA is the key to understanding how this process becomes imbalanced when illness occurs. Our greater understanding of the human genome in the past 20 years has opened a trove of opportunities to bring diseased cells back into balance.

The principle of RNA as the foundation for treating human disease may be new, but its implications on the trajectory of health care are monumental. As we continue to build the infrastructure around RNA therapeutics, we are seeking partners interested in making significant scientific and technical progress that will impact the lives of patients at the University of Michigan and around the world.

In the next 2-3 years, we look to successfully establish U-M's Center for RNA Biomedicine as the leader for treating genetic diseases. With your help, we will develop U-M's RNA Therapeutics Initiative into a leading bench-to-bedside platform that address a plethora of diseases, from cancer to neurodegeneration, and from those affecting the many to those touching the one.

*To learn more, including how to partner with us on this mission, visit **rna.umich.edu***

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CENTER LEADERSHIP

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