

DISCOVERY TO DELIVERY TRANSCRIPT

LAUGHTER/MUSIC

NARRATOR:

THESE FACES BEAR NO TRACE OF THE BATTLES ALREADY FOUGHT AND WON...
IN THESE YOUNG LIVES.

IIONA VIRGIN/Mother:

“She was purple, not breathing...”

HEIDI MANLEY/Mother

“His heart was beating very irregular...”

LAURA LINDQUIST/Mother

“They were born at 30 weeks, 6 days. They were tiny. They were very small.”

AMY GUMZ/Mother:

“He was having too many apnea episodes each day.”

IIONA VIRGIN/Mother

“I was very scared.”

NARRATOR:

TO EACH OF THESE PARENTS... THE MIRACLE OF MODERN MEDICINE ISN'T A
LOFTY IDEAL... IT'S AN INTIMATE REALITY.

LAURA LINDQUIST/Mother

“They did brain scans. They do stomach scans. They do eye scans and ear scans.”

AMY GUMZ/Mother:

“The medicine was there... and he's just fine.”

NARRATOR:

THIS KIND OF LIFE-ALTERING SCIENCE IN ACTION IS AT THE HEART OF THE
MORGRIDGE INSTITUTE FOR RESEARCH.

SANG KIM, PhD/Executive Director Morgridge Institute:

“It's both research and delivery.”

PAUL AHLQUIST, PhD/Virology

“Too often there is a disconnect between the areas of basic research and clinical medicine.”

NARRATOR:

WHAT’S UNIQUE ABOUT THE MORGRIDGE INSTITUTE IS THAT IT’S DESIGNED...
FROM THE GROUND UP... TO DELIVER.

OF THE FOUR RESEARCH AREAS -- TWO ARE FOCUSED ON DISCOVERY:
REGENERATIVE BIOLOGY, LED BY DR. JAMIE THOMSON...
AND VIROLOGY, DESIGNED BY DR. PAUL AHLQUIST.

THE OTHER TWO AREAS FOCUS ON DELIVERY: MEDICAL DEVICES AND
IMAGING, DESIGNED BY DR. ROCK MACKIE... AND PHARMACEUTICAL
INFORMATICS, LED BY EXECUTIVE DIRECTOR DR. SANG KIM.

SANG KIM, PhD/Executive Director Morgridge Institute:

“We’re in a position to unleash a bounty of deliver of solutions...”

TO DO THAT... MORGRIDGE INSTITUTE IS SPECIFICALLY GEARED TO HELP
SCIENTISTS MEET NEW AND DAUNTING CHALLENGES.

PAUL AHLQUIST, PhD/Virology

“We’re now in a very different phase of biology, really a distinct change in how we do
business.”

NARRATOR:

THESE WORLD CLASS SCIENTISTS KNOW -- TO REALLY MAKE A DIFFERENCE,
THEY’LL HAVE TO THINK DIFFERENTLY,

PAUL AHLQUIST, PhD/Virology

“In the past, biology has traditionally focused on studying individual genes, individual
biochemical processes. We have to deal with the fact that humans and other organisms have tens
of thousands of genes and vast interacting processes. We’re still clearly missing a number of
really important underlying principles.”

NARRATOR:

TO UNCOVER THOSE PRINCIPLES, BIOLOGISTS ARE TURNING TO MATHEMATICS
AND COMPUTER SCIENCE.

DR. JAMES THOMSON/Regenerative Biology

“Biologists now have these wonderful new tools to create huge data-sets, and they’re so huge that the average biologist doesn’t have the expertise to deal with them.”

PAUL AHLQUIST, PhD/Virology

“An analogy would be to the microscope. Centuries ago the microscope was a tremendous enabling device because it revealed new worlds. It revealed cells, microbes, things whose existence was not suspected before but without which you could not possibly understand biology. Nowadays all of our information is coming through in these complex data streams, and mathematics, computation, these are, biology’s new microscope.

They make new worlds visible to us. This is inherently a computational challenge; it’s beyond what any individual human brain can handle.”

NARRATOR:

ENTER DR. MIRON LIVNY... ARCHITECT OF CORE COMPUTATIONAL TECHNOLOGIES.

MIRON LIVNY, PhD/Core Computational Technology

“My responsibility is that they have the best computing capabilities.”

NARRATOR:

THE EMERGING FIELD OF COMPUTATIONAL SCIENCE WILL BE A KEY PART OF MORGRIDGE INSTITUTE... ACTING AS THE GLUE THAT WILL BIND THE RESEARCH CENTERS.

MIRON LIVNY, PhD/Core Computational Technology

“We don't want them to hit the wall or to say we cannot do it because of computing.”

NARRATOR:

BY COMBINING THE CAPACITY OF THOUSANDS OF COMPUTERS... DR. LIVNY CAN OFFER SCIENTISTS TREMENDOUS POWER.

MIRON LIVNY, PhD/Core Computational Technology:

“So a typical thing that I go to scientists and say is I'll give you a million computing hours, what are you going to do with it? They can look at more. They can generate more. They will do better, faster, greater science.”

THOMAS “ROCK” MACKIE, PhD/Medical Devices:

“One of our mantras is let’s do it better and let’s do it less expensively.”

NARRATOR:

DR. ROCK MACKIE IS CO-FOUNDER OF TOMOTHERAPY -- A COMPANY THAT DELIVERS REVOLUTIONARY RADIATION TREATMENT...

THOMAS “ROCK” MACKIE, PhD/Medical Devices:

“I know the problems in getting any kind of new technology out in the marketplace.”

AND HE BRINGS TO MORGRIDGE INSTITUTE, HIS ENTREPRENEURIAL DRIVE.

THOMAS “ROCK” MACKIE, PhD/Medical Devices:

“We can bring together the right people to tackle some big problems.”

PAUL AHLQUIST, PhD/Virology:

“The problems that we’re addressing now are so complex that they can’t possibly be mastered by any single discipline.”

NARRATOR:

WHICH IS WHY COLLABORATION IS ALSO A CENTRAL THEME.

DR. JAMES THOMSON/Regenerative Biology:

“Morgridge will pull everybody together... computer scientists, and engineers, biologists all talking to each other.”

PAUL AHLQUIST, PhD/Virology:

“There’s a lot to be done by putting people together... in ways that will drive interactions on a daily basis”

DR. JAMES THOMSON/Regenerative Biology:

“This is the future where biology’s going and unless you’re in a place like that, you’ll be at a competitive disadvantage.”

NARRATOR:

THE INTENDED RESULT IS SCIENCE THAT LEADS TO BREAKTHROUGH MEDICATIONS AND MEDICAL DEVICES.

THOMAS “ROCK” MACKIE, PhD/Medical Devices:

“We are going to see increased resolution, so that we can see smaller and smaller objects. We’re going to be able to, at some point, be able to even see a single tumor cell. One of the things that I think is going to be possible is to bring the lab of the hospital onto a chip, that you could even implant into a patient, so that everybody could in fact have a medical lab inside them. It is science fiction, but science fiction has a habit of coming true.”

NARRATOR:

STEM CELL PIONEER JAMIE THOMSON SAYS WE'RE ALREADY SEEING TANGIBLE RESULTS FROM THE WORK IN HIS FIELD.

DR. JAMES THOMSON/Regenerative Biology:

"It's never been possible for a pharmaceutical company to take their drug and put it on a human heart cell and say, is it toxic? And they've been burned really badly by that. It's a billion-dollar problem. What these newer cells do is give us access to all the pieces of the human body. So this is the first time that they can put drugs on a human heart cell and say, is it toxic? That means it's safer when it gets there, and they can make drugs quicker and, hopefully, cheaper because of this."

NARRATOR:

MORGRIDGE INSTITUTE WILL BUILD ON MEDICAL ADVANCES THAT ARE ALREADY MAKING AN IMPACT.

HONA VIRGIN/Mother

"I don't think that she would be here."

HEIDI MANLEY

"Without that medication, I have no idea what would have happened. I'm very thankful for it."

SANG KIM, PhD/Executive Director Morgridge Institute

"That's what people see, and that's what people care most about. It is always that final delivery step that has the biggest impact. I believe that right here at the Morgridge Institute, we are going to be among the pioneers that get to the cures much quicker."

NARRATOR:

SCIENTISTS AT MORGRIDGE WANT THEIR IMPACT FELT AROUND THE WORLD.

MIRON LIVNY, PhD/Core Computational Technology:

"We have the potential of taking the Wisconsin idea way beyond the boundaries of the state."

THOMAS "ROCK" MACKIE, PhD/Medical Devices:

"The world is becoming one global environment... and we would want to be able to have technology that could assist in the developing world as well. I feel that we are obligated for humanitarian reasons to do so."

SANG KIM, PhD/Executive Director Morgridge Institute

"This spirit of access is very, very important."

NARRATOR:

ACCESS... NOT JUST TO THE OUTCOMES, BUT TO THE INFORMATION... AND THE SCIENTISTS THEMSELVES.”

SUSAN MILLAR, PhD/Education Research

“Most people don’t read scientific journals or go to scientific conferences. We actually have to take some initiative and find really powerful, new, exciting ways to get information out.”

NARRATOR:

EDUCATION RESEARCHER, DR. SUSAN MILLAR HAS DEVOTED HER LIFE TO IMPROVING SCIENCE EDUCATION.

HER MISSION... IS TO TAKE THE DISCOVERIES BEYOND THE WALLS OF THE MORGRIDGE INSTITUTE AND CHANGE HOW WE LEARN ABOUT SCIENCE.

SUSAN MILLAR, PhD/Education Research

“We plan to get the stories of the scientist, find out what they do in their labs, what motivates them. We want to help make that available to all kids... that they will really feel excited about science... and be engaged with it for the rest of their lives. Some of them will become scientists.”

NARRATOR:

ULTIMATELY, FEW PEOPLE APPRECIATE SCIENCE MORE THAN THE FAMILIES PERSONALLY TOUCHED BY THE WORK OF RESEARCHERS.

IIONA VIRGIN/Mother:

“I’m grateful that there is someone who is willing to put in the work and the time to come up with answers.”

JOSHUA LINDQUIST/Father:

“I don’t know how you can thank them enough.”

LAURA LINDQUIST/Mother:

“We’ve been through a lot, our whole family has been through a lot and we’re just lucky, lucky that we’re here.”

NARRATOR:

BORN THE SAME YEAR AS THE MORGRIDGE INSTITUTE, CHRISTOPHER, BENJAMIN AND ANDREW WILL LIKELY FEEL ITS EFFECTS THROUGHOUT THEIR LIVES.

SANG KIM, PhD/Executive Director Morgridge Institute:

“There are a number of diseases for which, right now, there are no effective treatments, including many neuro-degenerative diseases. The goal is to achieve those life-changing therapies.”

THOMAS “ROCK” MACKIE, PhD/Medical Devices:

“The thrill is making a difference.”

MIRON LIVNY, PhD/Core Computational Technology:

“We have the opportunity to do something completely new.”

SANG KIM, PhD/Executive Director Morgridge Institute:

“We want to be transformative.”

PAUL AHLQUIST, PhD/Virology:

“From time to time we’re able to glimpse new directions in our science . and those moments are actually tremendously rewarding. It’s very much like standing on a new shore... looking over a new continent which you’ve just discovered, and seeing a landscape that no one has ever seen before, and seeing all the potential that it has for the future.”

MUSIC ENDS