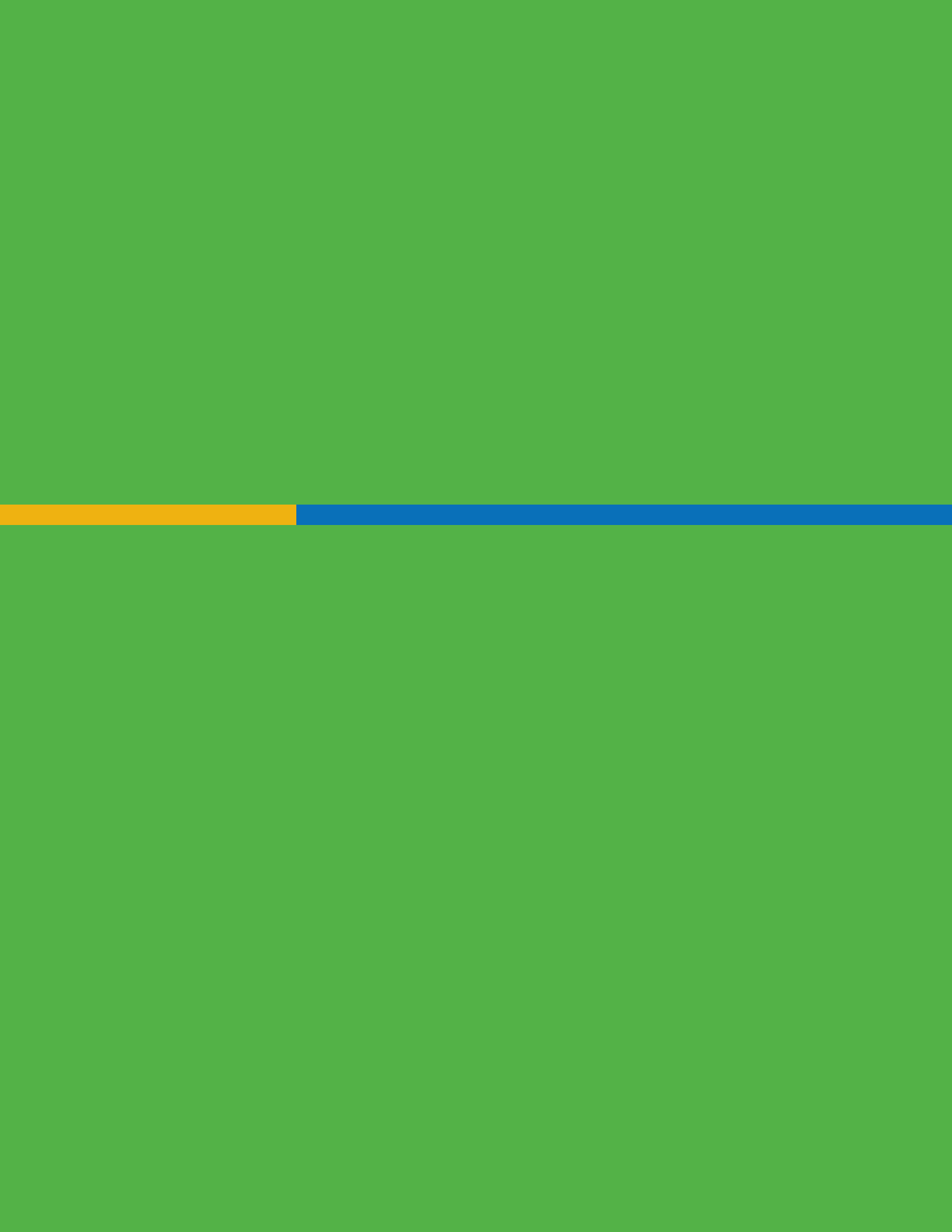



The next generation of vaccine development
is dawning.







And Georgia's research universities are primed to make our state a major player in these life-saving treatments. What's needed is a plan to leverage their capabilities and catapult Georgia to a position of world leadership in new vaccines and therapeutics.

We have the plan. Together, we can make it happen.





The Next-Generation Vaccines and Therapeutics Initiative from the Georgia Research Alliance

The next generation of medicine is being invented right now. It's characterized in part by research around a new class of vaccines and therapeutics that marshal the immune system to prevent and treat diseases like arthritis, malaria, cancer, diabetes, HIV/AIDS, Alzheimer's and influenza.

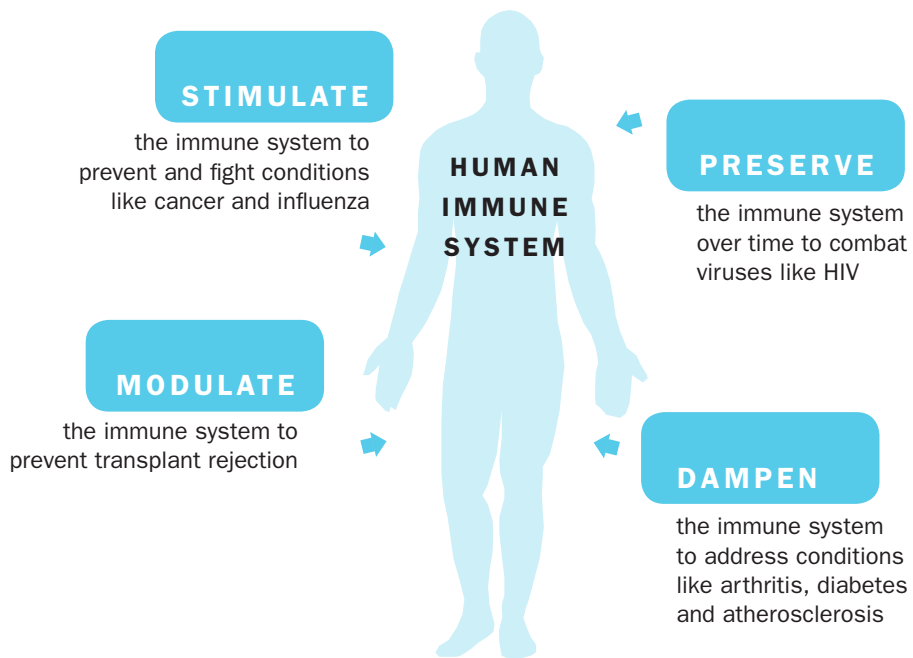
Indeed, next-generation vaccines and therapeutics are:

- expected to be a combined \$34 billion market by the year 2010
- already the focus of major initiatives underway at Georgia's research universities
- poised to make a major contribution to improving global health

This means that in this rapidly evolving field of medicine, Georgia is at the intersection of capability and opportunity. Now, we must capitalize on our position and become a *global leader* in vaccine and drug development. We can do that by working together to reach the goals in GRA's Next-Generation Vaccines and Therapeutics Initiative.



How They Work: Next-Generation Vaccines and Therapeutics...



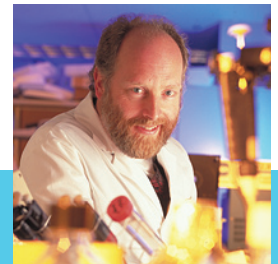
GOAL 1: **Become a global center for discovering and developing next-generation vaccines and therapeutics.**

- *What we have:* A strong foundation of both talent and infrastructure.
- *What we need:* More world-class researchers working on the most advanced methods for developing next-generation vaccines and therapeutics; expanded facilities to enhance discovery.

Two factors – talent and infrastructure – play the biggest role in Georgia’s ability to become a world-class vaccine/therapeutics center.

The talent axiom is simple: *If you want to lead, you must have the best team.* And so, attracting and keeping the best scientific talent is the cornerstone strategy of the GRA Initiative. Georgia

Dr. Andrew Mellor,
Medical College of Georgia



A Powerful Base to Build on

Georgia has world-class scientific talent in GRA’s 57 Eminent Scholars. Among them:

- *Dr. Rafi Ahmed, Emory University.* A highly respected authority on immune memory; he has already put Georgia on the map in vaccine development.
- *Dr. Ralph Tripp, University of Georgia.* A leading expert on emerging infectious diseases that are transmissible between animals and humans.
- *Dr. Andrew Mellor, Medical College of Georgia.* With his colleagues, has made a seminal scientific discovery that could significantly impact the treatment of cancer and chronic infectious diseases.
- *Dr. Julia Hilliard, Georgia State University.* One of the world’s foremost experts on herpes B, a virus found in primates that can be lethal when transmitted to humans.
- *Dr. Allan Kirk, Emory University.* Conducts groundbreaking “bench-to-bedside” research on how the immune system regulates itself – and how these regulation mechanisms help the body tolerate organ transplants.

has already reaped the benefits of such a strategy through the Georgia Research Alliance Eminent Scholars® program. All told, the Eminent Scholars have generated enormous economic and quality-of-life returns for Georgia.

In addition to building on its base of Eminent Scholars, the Georgia Research Alliance also seeks to attract “rising star” researchers in vaccines and immune therapies. GRA’s Distinguished Investigators program is designed to create a pipeline of scientific talent that has the potential to invent the field.

Of course, any leading scientist contemplating a move to Georgia would want to know whether our research universities are well-equipped to pursue breakthrough discoveries for manipulating the human immune system. As a result, infrastructure is crucial to our state’s recruitment and retention efforts.



Dr. Rafi Ahmed,
Emory Vaccine Center



Animal Health
Research Center

GRA’s 22 Centers of Research Excellence comprise a strong infrastructure. Some examples:

- *Emory Vaccine Center*. Brought about the discovery of one of the world’s most promising HIV/AIDS vaccines for humans. Also developing vaccines targeting malaria, hepatitis and other diseases.
- *Animal Health Research Center (University of Georgia)*. One of the most technologically advanced university-based facilities in the nation dedicated to diseases that affect both animal and human health, including avian flu, SARS, and West Nile virus.
- *Center for Influenza Research and Surveillance*. A joint enterprise between Emory and the University of Georgia launched in 2007; one of only six such National Institutes of Health centers in the country.
- *Medical College of Georgia Cancer Research Center*. Focused on basic and clinical cancer research, including the underlying mechanisms for developing vaccines that prevent and treat cancer.

As with scientific talent, Georgia has an excellent foundation on which to expand its research infrastructure. *But we must add key components to be regarded as world class.* Among these are new facilities to drive next-generation vaccine and therapeutic discoveries through clinical trials. By building such facilities, Georgia will have a far greater chance of generating outside investment in developing promising vaccines and therapeutics.

Recruiting new talent will bring a concentration of vaccine/therapeutics experts that's unparalleled in the nation – and the world.

Expanding our universities' research facilities will elevate Georgia into the top tier of research infrastructure nationwide.

We must do both.

Dr. Julia Hilliard,
Viral Immunology Center



A Powerful Base to Build on (continued)

- *Viral Immunology Center (Georgia State University).* Studying viruses that are transmitted from animals to humans. Also home of the federal laboratory that provides rapid diagnosis of deadly herpes B virus infections.
- *Center for Drug Design, Development and Delivery (Georgia Institute of Technology).* One of only a few centers of its kind bringing together scientists and engineers to tackle the design, development and delivery of drugs and vaccines.



GOAL 2: **Become a model for collaboration.**

- *What we have:* Excellent relationships among university, industry and government leaders.
- *What we need:* Ways to maximize collaboration among scientists, and between academia and industry.

Collaboration in medical/scientific research has never been more important.

New findings in animal health have major implications for human health; new relationships between chronic and infectious diseases are being discovered regularly; the medical landscape is being altered in faster, more profound ways than ever before.

GRA has engineered collaboration among its research universities, and between the universities and industry, notably in the area of vaccine and drug discovery.

Now, it's time to take this collaboration to an entirely new level.

The GRA Next-Generation Vaccines and Therapeutics Initiative is implementing a strategy that will make Georgia a model of collaboration. This strategy builds on the partnerships that GRA has fostered by creating new opportunities through symposia and roundtables that involve academia, industry and federal laboratories, including the Centers for Disease Control and Prevention. It also provides seed grant incentives to enterprising scientists that can foster early-stage collaborative research – the kind of effort that helps attract significant new investment from sources outside of Georgia.

By becoming a model of collaboration, Georgia stands to reap the potentially huge rewards of joint research funding. But there's an even greater benefit: *People working together increases the likelihood that Georgia will develop groundbreaking discoveries in live-saving, next-generation vaccines and therapeutics for cancer, diabetes, influenza and many other infectious and chronic diseases.*



GOAL 3: **Grow the economy and create new jobs.**

- *What we have:* VentureLab, a program that identifies university laboratory discoveries with high commercial potential and helps new companies form around these discoveries. (In its first five years, VentureLab has led to the creation of more than 60 companies and has helped attract a return of 10-to-1 for every dollar invested by the state.)
- *What we need:* A comprehensive strategy to propel investment in promising new companies at *all* stages of development.

Exploring new frontiers of science and medicine is essential. But Georgia's aim is higher: We want to see people enjoy better health from our development of new vaccines and new medicines.

To reach this aim, our state must have a strategy to ensure that *every promising discovery of a vaccine or treatment* has the best opportunity to be fully developed, tested, licensed and brought to market. To accomplish that in Georgia, we have to remove the barriers that have historically impeded commercialization.

These barriers are surmountable – to remove them simply requires a clear vision and course of action. Thus, the GRA Next-Generation Vaccines and Therapeutics Initiative is implementing a series of new strategies to nurture early-stage discoveries and to increase the amount of capital available to new and developing companies.

By removing barriers and accelerating commercialization of the most promising vaccines and therapies, Georgia sends a message that we're serious about developing this focused industry.

It's a powerful message, one that will drive new private equity investment to our state.



The path forward ...

What will it take to leverage Georgia's strengths in next-generation vaccines and therapeutics research – and make our state a global leader in this area? Nothing less than the investment of time, energy and resources of individuals, foundations and government entities.

In the months and years ahead, the Georgia Research Alliance will continue working to build broad and deep support for the Next-Generation Vaccines and Therapeutics Initiative. If you would like to engage in a dialogue about supporting this important initiative, we invite you to share your ideas and questions by e-mailing us at opportunity@gra.org.

Why Georgia Now?


Georgia has been fast gaining ground in scientific research.

Since 1990, the Georgia Research Alliance has put Georgia on the map by leveraging a \$450 million state investment into a \$2 billion return. Ernst & Young ranks Georgia in the “Top 10” in terms of biotechnology companies.

While all of this is good news, GRA recognized that the state needed to focus its efforts in a key area of research and development in order to become a global player.

Beginning in 2005, through consulting partners McKinsey & Co. and Battelle Memorial Institute, GRA conducted an exhaustive study of the core research strengths of the state's research universities, mapping those strengths against larger market opportunities. What we found was that *Georgia is at the intersection of capability and opportunity* in the area of next-generation vaccines and therapeutics.

As a result, GRA developed a bold plan to leverage these strengths and seize a market opportunity – while addressing critical human needs. That plan is the GRA Next-Generation Vaccines and Therapeutics Initiative.



*Track the progress of the GRA Next-Generation
Vaccines and Therapeutics Initiative*

Sign up to receive Pathways, GRA's new Next-Generation Vaccines and Therapeutics Initiative newsletter, by e-mailing Kathie Robichaud at GRA (krobichaud@gra.org).



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