

# The Global Health Sector's Contributions to North Carolina's Economy

June 2022 | Final Report

Project Number: 0218472

**Prepared for**

**North Carolina Global Health Alliance**  
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**RTI International**

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make this report possible

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THE UNIVERSITY  
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**Ipas** Partners for  
Reproductive Justice

**MCI**  
Male Contraceptive  
Initiative

**fhi360**  
THE SCIENCE OF IMPROVING LIVES

**RTI**  
INTERNATIONAL

**Christopher and Susan LeGrand**

**Bryan and Kellie Huffman**

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# Executive Summary

The North Carolina Global Health Alliance is a network of global health organizations working to improve health outcomes locally and around the world. Formerly known as the Triangle Global Health Consortium, the Alliance's mission is to advance North Carolina as an international center for research, training, education, program implementation, advocacy, and business dedicated to improving the health of the world's communities. Founded in 2009 as a partnership between Duke University, North Carolina State University, the University of North Carolina at Chapel Hill, IntraHealth International, RTI International, FHI 360, and the North Carolina Biotechnology Center, the Alliance seeks to facilitate greater collaboration among individuals and institutions, thus increasing their collective capacity to address and improve the health of underserved populations through research and the implementation of innovative solutions. The Alliance brings together diverse organizations across the state and beyond to build community, share best practices, prepare the next generation of global health leadership, and advance North Carolina as an international center of global health.

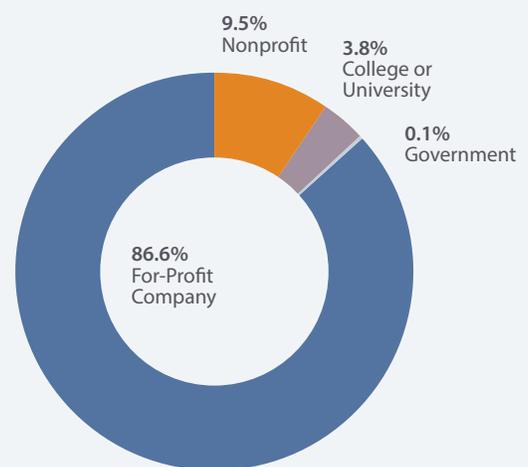
Global health is a cross-disciplinary field that promotes collective solutions to improving health, reducing health disparities, and protecting against global threats to health. From mitigating emerging disease outbreaks to developing treatments for diseases and increasing access to safe drinking water and sanitation, North Carolina is home to a myriad of organizations that are at the forefront of global health. Activities like new drug development, medical device manufacturing and clinical research not only improve global health, but also stimulate and support employment and economic activity.

Despite challenges caused by the COVID-19 pandemic, North Carolina's global health sector continues to grow and make substantial contributions to the state's economy. This report provides an overview of global health organizations' contributions to North Carolina's economy, as well as the social impact these organizations have.

## NORTH CAROLINA'S GLOBAL HEALTH ECOSYSTEM

North Carolina is home to more than 900 organizations and institutions, operating in more than 175 countries, that work to improve the health of the world's communities. As depicted in Figure 1, in 2021, the largest segment consists of for-profit companies. Among them are biotechnology and pharmaceutical innovators, such as Merck and Humacyte, and contract research organizations like IQVIA and PPD. The second-largest sector, nonprofits, includes internationally known organizations such as IntraHealth International, FHI 360, MiracleFeet, and the Male Contraceptive Initiative. Colleges and universities, such as the University of North Carolina, Duke University and North Carolina State University train the next generation of global health talent and spur innovation through research and creative problem solving.

**Figure 1. Global Health Organizations by Type**

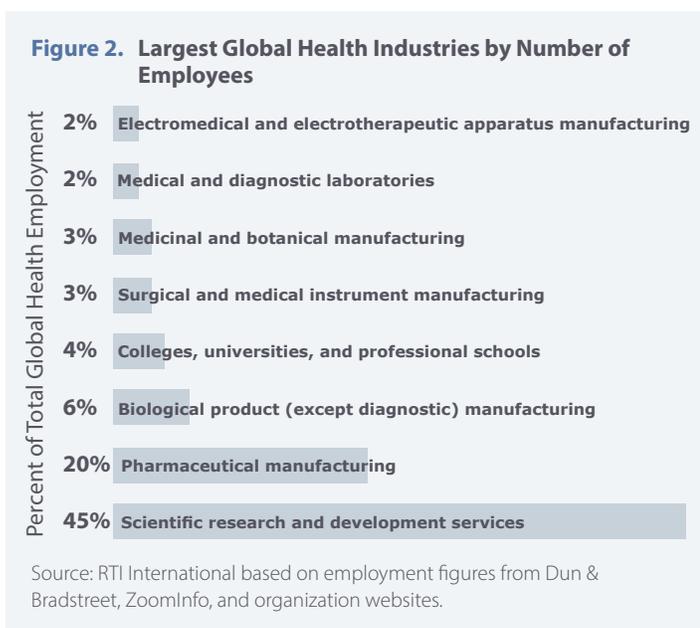


Source: RTI International based on information from the North Carolina Global Health Alliance, academic institutions, and the North Carolina Biotechnology Center's Company Directory.

## LEADING EMPLOYMENT CLUSTERS

Global health organizations sustain more than **56,000 direct jobs** in North Carolina across multiple sectors. For each direct job in the global health sector, two additional jobs are supported in other industries.

Although global health organizations span many industries, employment is concentrated in two key industries in North Carolina: scientific research and development services, and pharmaceutical manufacturing. The scientific research and development services industry encompasses organizations that are conducting original investigations undertaken on a systematic basis to gain new knowledge (research) and/or applying research findings or other scientific knowledge to create new or significantly improved products or processes.<sup>1</sup> The pharmaceutical manufacturing sector produces pharmaceutical preparations intended for internal and external consumption.<sup>2</sup> Combined, these two industries employ 65% of all global health workers in North Carolina. The state's largest global health industries by number of employees are presented in Figure 2.



## CONTRIBUTIONS TO NORTH CAROLINA'S ECONOMY

In addition to direct employment, global health organizations spend money on goods and services from other sectors of the economy, thereby sustaining additional indirect jobs and sales. The housing market, professional services like accounting and market research, and building services are just some of the industries supported by global health organizational spending. Even more jobs are supported by global health sector employees spending money in the local economy. This organizational and employee spending supports an additional 117,850 jobs in North Carolina. Combined, these direct and indirect jobs employed approximately 3.4% of North Carolina's total labor force in 2021. Other measures of economic contributions include labor income, total value added, and output, as summarized in Table 1.

- Labor income includes employee compensation (wages and benefits) and proprietor income, which consists of income from self-employed individuals and independent business owners. Labor income indicates how much additional personal income is created by global health activities. In 2021, global health jobs paid \$13.1 billion in annual wages, salaries, and benefits, an average of about \$75,300 per job.
- Total value added is a measure of the contribution to gross domestic product made by an individual industry. It is the value of total output less the value of intermediate goods and materials or supplies that are used in producing them. Global health organizations contributed \$31.9 billion in total value added to North Carolina's economy in 2021. This is equivalent to an increase in the standard of living of \$3,000 per resident and is comparable to other important North Carolina sectors, such as construction.
- Output is the final value of goods and services. The global health industry directly produced \$37.2 billion of goods and services and contributed another \$22.1 billion in output.

<sup>1</sup> NAICS Association. "NAICS Code Description: 5417." Accessed: NAICS Code Description | NAICS Association

<sup>2</sup> NAICS Association. "NAICS Code Description: 325412." Accessed: NAICS Code: 325412 Pharmaceutical Preparation Manufacturing | NAICS Association

**Table 1. Summary of Economic Impact of Global Health Organizations in North Carolina, 2021**

MEASURE	DEFINITION	DIRECT	SECONDARY	TOTAL
<b>Jobs</b>	Number of jobs	56,024	117,850	173,874
<b>Labor Income (\$ billions)</b>	Labor income is the value of wages, salaries, and benefits	\$6.1	\$7.0	\$13.1
<b>Total Value Added (\$ billions)</b>	Total value added is total output minus the cost of intermediate materials	\$19.8	\$12.1	\$31.9
<b>Output (\$ billions)</b>	Output is a measure of the total value of goods and services	\$37.2	\$22.1	\$59.3

Note: Secondary effects include two responses to direct global health sector spending. The first response is the new business spending among local businesses as they buy more goods and services to meet growth. The second response is the spending of wages, salaries, and benefits associated with job creation.

Source: RTI analysis based on model produced with IMPLAN Pro V3.1, expressed in current dollars.

The fiscal impact of the global health sector is also important. The additional economic activity created state tax revenue (\$1.7 billion) and federal tax revenue (\$3 billion) that totaled \$4.7 billion.

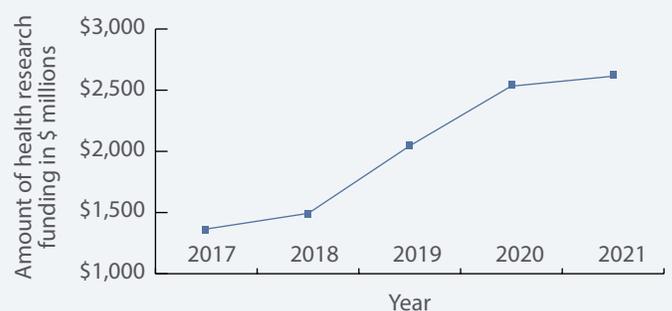
North Carolina’s global health sector is robust and growing. Since 2017 (which was the last time the North Carolina Global Health Alliance released an economic impact report), North Carolina employment in leading global health industries has grown at a compound annual growth rate of 2.7%, twice the rate of North Carolina’s employment growth overall.<sup>3</sup> Growth in the number of global health organizations also has been strong: more than 180, or 20% of the organizations in this analysis, were founded in 2017 or after. The recent COVID-19 pandemic increased demand for health products and services as well, as it generated public awareness of the global health sector’s crucial role in the local, national and international response to this threat. With a diverse network of organizations, North Carolina’s global health sector will continue developing innovative solutions to complex health issues across the globe, while sustaining and enriching local communities.

<sup>3</sup> This is based on employment figures from the Bureau of Labor Statistics’ Quarterly Census of Employment and Wages between 1st quarter 2017 and 3rd quarter 2021. Accessed: Quarterly Census of Employment and Wages : U.S. Bureau of Labor Statistics (bls.gov)

Health research funding is an important source of revenue for global health organizations. In 2021, more than \$2.6 billion in health research funding came to North Carolina from external sources, such as federal agencies and nonprofits. Much of this funding is spent locally on wages, goods, and services.

The amount of federal health research funding in North Carolina has nearly doubled since 2017. Major funding sources include the National Institutes of Health, Centers for Disease Control and Prevention, National Science Foundation, and Bill & Melinda Gates Foundation.

**Figure 3. Federal Health Research Funding Going to North Carolina Organizations by Year**



## NORTH CAROLINA'S GLOBAL HEALTH SECTOR

North Carolina has a robust and growing global health sector. More than 900 organizations work locally and internationally to save lives, improve health, and protect against global threats. The purpose of this study is to measure how global health work supports North Carolina's economy.

**Increases the size of North Carolina's economy by**

**\$31.9 BILLION**

**This is more than**

**\$3,000 PER RESIDENT**

### CONTRIBUTIONS TO NORTH CAROLINA

More than **900** organizations

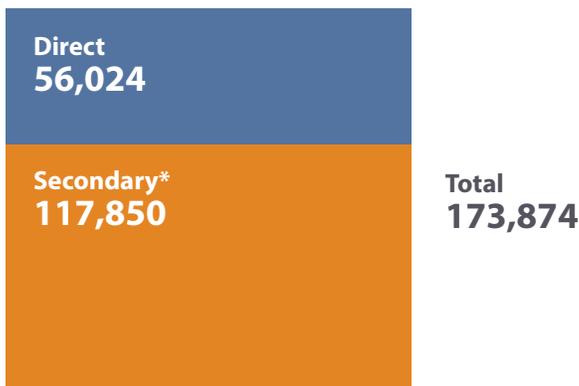
Attracts more than **\$2.6 billion** in annual research funding

Adds **\$1.7 billion** in state and local tax revenues

### NC GLOBAL HEALTH INDUSTRY SECTORS

- Knowledge Dissemination
- Clinical Trials
- Pharmaceutical Manufacturing
- Clinical Research
- Community Services and Disaster Relief
- Biological Products
- Noncommunicable Diseases

### JOBS



\*Secondary effects include two responses to the direct global health sector spending. The first response is the new business spending among local businesses as they buy more goods and services to meet new demands. The second response is the spending of wages associated with job creation.

### Global Health Sector Wages, Salaries, and Benefits

Direct	Indirect	Total
<b>\$6.1 BILLION</b>	<b>\$7 BILLION</b>	<b>\$13.1 BILLION</b>

### Average Global Health Sector Wages, Salaries, and Benefits

Direct	Indirect	Average
<b>\$108,800 PER JOB</b>	<b>\$59,400 PER JOB</b>	<b>\$75,300 FOR ALL JOBS</b>



**North Carolina has a long history of a wide variety of organizations working collaboratively to achieve global health advances, spur innovation, and improve health. The following pages highlight just a few of the North Carolina Global Health Alliance’s members and their contributions to improving the health of the world’s communities. The organizations featured on the following pages provided financial support for this report.**



THE UNIVERSITY  
of NORTH CAROLINA  
at CHAPEL HILL

## GILLINGS SCHOOL OF GLOBAL PUBLIC HEALTH & THE INSTITUTE FOR GLOBAL HEALTH AND INFECTIOUS DISEASES

The Gillings School of Global Public Health is the top public school of public health. Our faculty work across campus and with all the UNC Health Science Schools, and in long term global collaborations with FHI 360 and RTI. The Gillings School is a founder and partner in the UNC Institute for Global Health and Infectious Diseases (IGHID), an organization that coordinates many global health activities at UNC and maintains collaborative sites in Africa, Asia and the Americas that are critical to UNC research, education and service. Our mission is to improve public health, promote individual well-being, and eliminate health inequities across North Carolina and around the world. The school anticipates future health threats and accelerates public health solutions. A commitment to excellence is part of everything done in the school: teaching, research, scholarship, practice and bridging the gap between academic research and practical public health solutions. The work of the school's faculty, students, and staff occurs in all 100 North Carolina counties, throughout the United States, and in more than 45 countries spanning five continents. Funding for the school in 2020-21 was \$138.5 million, including \$34 million in grant funding with a global focus.

More than 70 of the 250 faculty members at Gillings focus on global health, working across eight departments/units, including Biostatistics, Environmental Sciences and Engineering, Epidemiology, Health Behavior, Health Policy and Management, Maternal and Child Health, Nutrition, and the Public Health Leadership Program. Work is performed in many global public health areas with known strengths in cancer, health equity, nutrition, and water. Our School actively engages many faculty and students in affecting global health policy and practice through researching, advocating, educating, policy-influencing and providing advice and technical support at all levels from local

communities to global bodies such as WHO and World Bank.

The Institute for Global Health and Infectious Diseases at the University of North Carolina at Chapel Hill is one of the largest global health programs in the United States. Working in more than 50 countries around the globe, we have made breakthrough discoveries — including the prevention of HIV transmission — while saving lives and offering critical training to thousands of health professionals in the U.S. and in resource-limited communities around the world. Our mission is to harness the full resources of the University and its partners to solve global health problems, reduce the burden of disease, and cultivate the next generation of global health leaders. The Institute fosters an environment in which faculty, students, and the broader university community work together in unique, innovative ways to address critical issues in global health.

## Ipas

### A PERSONAL REFLECTION ON GLOBAL HEALTH BY DR. ANU KUMAR, PRESIDENT AND CEO OF IPAS



When I was a public health student, I was shocked by global maternal mortality numbers—and by the disparity of who dies from pregnancy-related causes. There is a good reason why these deaths are used as an indicator of inequality between and within countries. But why is this still such a problem in our modern world?

Gender, racial and economic inequities in health-care systems around the world make it difficult for women, people of color, LGBTQ people and other marginalized groups to get the essential health care they need. History, politics, racism, patriarchy, discrimination, colonialism, cultural beliefs, and power imbalance have built longstanding barriers

to health and well-being. And it doesn't matter who you are or where you live.

These same structural inequities have long blocked access to abortion care. Ipas works around the world to expand access to abortion and contraception for all people. We're laser-focused on that very specific mission because we know that the right to health and the right to bodily autonomy—to make decisions about your own health, sexuality, gender, and reproduction—are critical to global health and development. And for women and people who can get pregnant, these rights matter at a very personal level; and deeply impact their role in society.



Anu Kumar, President and CEO of Ipas, an international reproductive justice organization solely focused on expanding access to abortion and contraception.

I've spent 20 years now at Ipas, and since becoming president and CEO I've spent quite a bit of time thinking seriously about power and equity in the broader global health field, in the somewhat narrower reproductive health and rights field, and within Ipas. My personal and professional experience as a woman of color and immigrant has shaped my career in global public health and led me to reckon with injustice and inequity both personally and professionally. I know that Ipas has made a profound difference in the lives of millions of people around the world and I'm grateful to have been a part of it.

## NC STATE UNIVERSITY

### NC STATE UNIVERSITY

NC State University is a leader in "One Health", and through its partnerships, interdisciplinary faculty expertise, research, and engagement activities promotes health equity for people, animals and the environment worldwide. NC State Global One Health interdisciplinary program transcends academic disciplines, synergizes the university's strategic goals, and train the future generations of global leaders by uniting departments, colleges and global partners. Guided by the Wolfpack 2030: Powering the Extraordinary Strategic Goals, the Global One Health program promotes all University missions on excellent teaching, the creation and application of knowledge, and engagement with public and private partners.



### FHI 360'S PARTNERSHIP FOR EDUCATION EQUITY IN DURHAM, NORTH CAROLINA

Public schools in the United States continue to face challenges due to the ongoing impact of COVID-19, which has strained the educator workforce and exacerbated educational inequities, especially for students who have been historically marginalized. School and district administrators — who have various urgent demands for their time and attention — need tools that help them quickly understand trends, identify problem areas and adopt course

corrections. Accessible and comprehensive data are essential to help school and district administrators make informed decisions.

FHI 360 is committed to improving lives in lasting ways by advancing integrated, locally driven solutions for human development. So, in Durham, North Carolina, we partnered with Durham Public Schools (DPS) to help them make data-driven, equity-based decisions and improve student achievement outcomes across all 54 schools in the DPS system.

FHI 360's U.S. Education group worked closely with DPS to identify their needs and make recommendations for a web-based data dashboard, aggregating a wide range of metrics. These include student demographics, assessment results, grades, discipline, attendance, social emotional well-being, and services. Access to data can improve transparency and accountability by providing a holistic view of student achievement or patterns of challenges, as well as the underlying causes for either. It shows places where inequities exist, making it easier to explore the causes of disparities and discuss the interventions and systemic changes required to move toward more equitable outcomes. With this bird's-eye view, educators can track and analyze data and make informed decisions using easy-to-understand snapshots, trends, strengths and gaps.

Access to data can improve transparency and accountability by providing a holistic view of student achievement or patterns of challenges, as well as the underlying causes for either. It shows places where inequities exist, making it easier to explore the causes of disparities and discuss the interventions and systemic changes required to move toward more equitable outcomes. For example, a high school principal can run an attendance report to see if student subgroups are showing signs of disengagement, or a conduct report to determine if racial disparities exist in the type and number of disciplinary actions. Similarly, if district leadership wants to achieve greater equity in science, technology, engineering, and mathematics (STEM) education, a data dashboard can reveal the demographics of students

enrolled in advanced-level mathematics courses, disaggregating the enrollment numbers by gender as well as racial and ethnic groups.

As DPS moves toward adoption and roll-out of their web-based data dashboard this summer, FHI 360 looks forward to providing strategic dissemination, communications and implementation support. We are also eager to continue to provide support to help other school district partners use data to ensure more equitable education outcomes.



Photo: Jessica Scranton

Duke GLOBAL HEALTH INSTITUTE

### DUKE GLOBAL HEALTH INSTITUTE

Formed in 2006 as part of Duke University's commitment to spark innovation in global health research and education, the Duke Global Health Institute brings together knowledge and resources from across the university to address the most important global health issues of our time. We seek to achieve health equity for vulnerable groups and individuals around the world by conducting collaborative, interdisciplinary research on global health challenges; advocating for evidence-based health policies and solutions; and training the next generation of global health leaders through hands-on learning.

With more than 180 faculty spanning expertise

in medicine, nursing, engineering, environmental sciences, public policy, social sciences and the humanities, DGHI is engaged in 270 active research projects in 33 countries, with more than \$75 million in external funding. The institute facilitates bilateral learning and exchange through dozens of research and educational programs that focus on the United States and North Carolina. This includes ongoing efforts to address health disparities experienced by vulnerable communities in North Carolina due to environmental conditions, racial or socioeconomic status, stigma and other factors that create inequities in access to health.

DGHI hosts one of the most comprehensive global health education programs in the country, with courses and training for undergraduate and graduate students, doctoral researchers, medical students, residents and fellows. Students in our Master of Science in Global Health program are frequently engaged with North Carolina organizations working on global health and health policy, where they provide research and analysis while honing their professional skills.



### MALE CONTRACEPTIVE INITIATIVE HIGHLIGHT

Who we are: Male Contraceptive Initiative is dedicated to improving family planning by providing more birth control options for men and couples. We believe in reproductive autonomy for all. We aim to

empower couples with the resources they need to choose the family planning path that works best for them.

What we do: Male Contraceptive Initiative (MCI) provides funding and advocacy support for the research and development of new methods of non-hormonal, reversible male birth control. We support researchers all over the world in their work developing the next generation of male contraception. We provide a diverse range of funding options, including grants and direct investment. Additionally, we promote the field of male contraception and provide people with the educational resources necessary to understand how the new male birth control methods will function as well as the positive impact they will have on the world.

Funding: We allocate as much of the capital we raise through our fundraising efforts directly to those researching male contraception. We support young researchers, academic labs, start-ups, and pharmaceutical companies through a robust grant-making practice and equity investments whose return is reinvested into the field.

Advocacy: We have shown that men are interested in male birth control methods, and that women would trust their partners to take contraception. That said, there is a persistent belief that this is not the case. Our advocacy includes sharing potential user perspectives and accurate information about the demand and need for male birth control, policy advocacy to support male contraceptive-adjacent legislation, supporting students in male contraceptive health communication work, and our podcast.



### RESEARCH TRIANGLE INSTITUTE

As a major global research institution that has been improving the human condition in countries around the world for nearly six decades, RTI works to transform the health of populations through innovation, science, and global collaboration.

By combining the intellectual talents of leading scientists and experts across social and laboratory sciences, engineering, and international development, we are able to address some of the world's most complex challenges. Driven by our own mission to improve the human condition, we seek to create and apply programmatic and technological solutions that will make a positive difference around the world. We blend an innovative spirit with a focus on high-quality methodologies to advance diagnosis and treatment of disease, alleviate health disparities, and improve well-being across populations.

Clients in government, academia, and the private sector rely on our research to inform and transform interactions with and use of health care systems. From working to eliminate hurdles in new antibiotics development to accelerating research on the effects of long-haul COVID, RTI's work to improve the human condition focuses extensively on keeping people healthy. For example, our chemists are accelerating research into new antibacterial drugs that will help in the fight against antibiotic resistance. Pharmaceutical, diagnostic, and medical device companies turn to our experts for substantiated, authoritative evidence and advice to

understand the value, efficacy, and safety of their products.

Complementing our experts in chemical and medical sciences, our social scientists are tackling global health questions around care delivery, health equity, and community health. Recently, our researchers found that spending to promote vaccinations for older Americans prevents disease and reduces health care costs. Our newest business operation, RTI Health Advance, seeks to apply our expertise in health care innovation to the private sector, with a goal of improving outcomes and reducing health disparities for all. We are also coordinating a nationwide network of researchers seeking to understand the long-term effects of COVID-19 infections and building a cloud-based platform to facilitate access on data that can inform research and practices to address the national opioid public health crisis. In Guinea, we are strengthening community involvement in the fight to end malaria.

Within North Carolina, where our global headquarters are located, and across the world, we advance our mission to build a healthier, safer and more prosperous future.





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