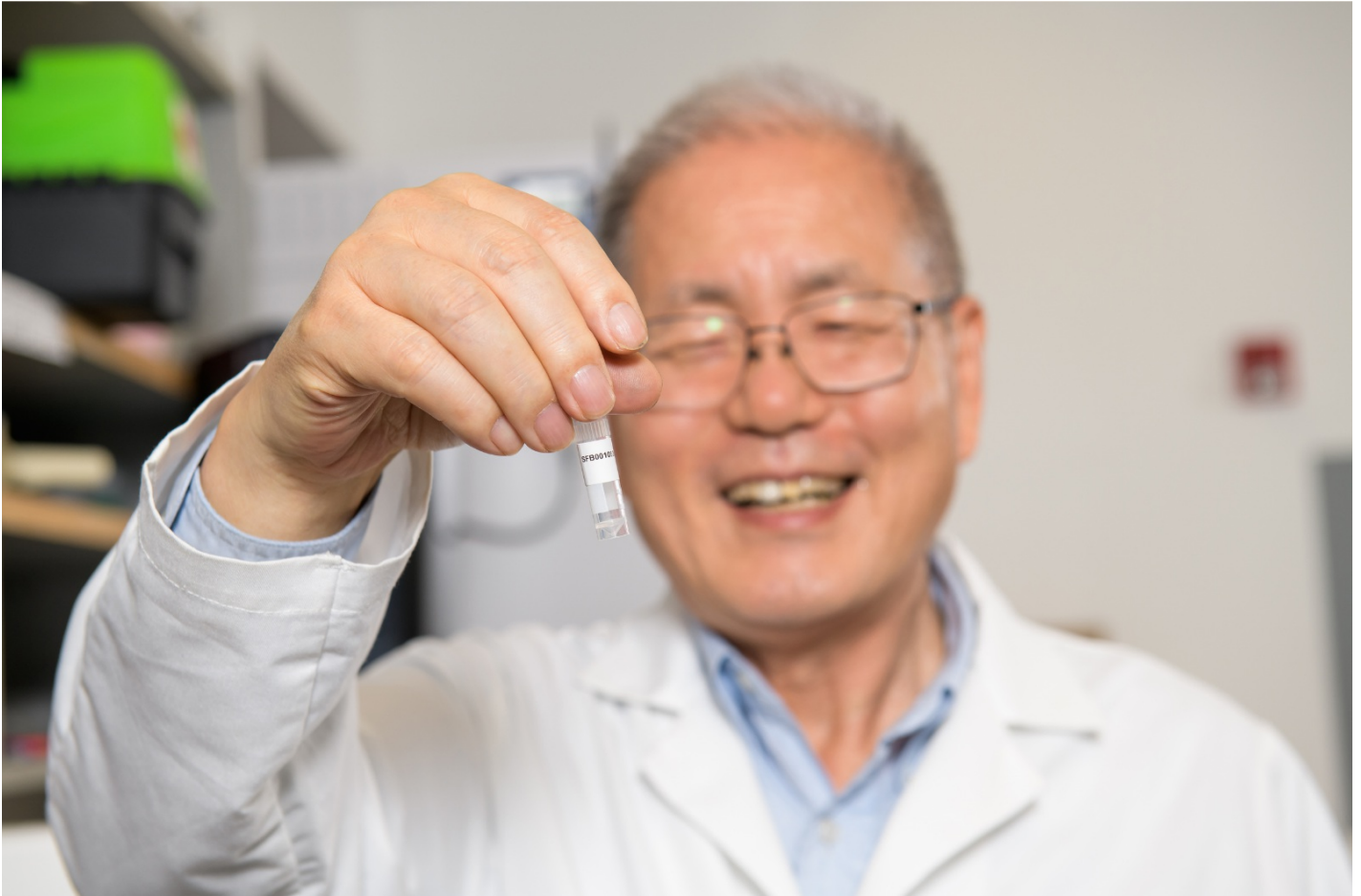


The University Of Alabama At Birmingham Is Transforming The Global Fight Against Pneumococcal Disease

University of Alabama at Birmingham



Pneumococcal disease remains one of the world's most persistent public health threats, causing pneumonia, bacteremia, and meningitis—particularly in very young children, older adults, and immunocompromised individuals. In the United States alone, pneumococcal pneumonia leads to more than 150,000 hospitalizations annually, with a mortality rate of up to 7%.

For decades, vaccine development has been hindered by limited tools to measure immune protection and a lack of access to diverse bacterial variations, called serotypes.

At the University of Alabama at Birmingham (UAB), Moon Nahm, MD, has quietly led a scientific revolution to address these challenges. Over the past 22 years, Nahm has transformed the global fight against pneumococcal disease through groundbreaking research and innovation.

Nahm's lab, which has been backed by funding from the National Institutes of Health (NIH), has characterized

approximately 45 pneumococcal variations, enabling their inclusion in next-generation conjugate vaccines that trigger a robust, lasting immune response. He also developed the Multiplexed Opsonophagocytic Killing Assay (MOPA), a quick and efficient lab test that measures how well antibodies help immune cells find and destroy bacteria, that is now the global gold standard and endorsed by the World Health Organization (WHO). His third-generation pneumococcal Enzyme-Linked Immunosorbent Assay (ELISA) test is widely used in WHO-sponsored studies worldwide.

In keeping with his commitment to global health equity, Nahm has made his MOPA strains freely available for academic and non-clinical use through the National Institute of Allergy and Infectious Diseases' BEI Resources, helping reduce costs and expand vaccine access in low-income countries.

Recognizing the potential of Nahm's work, UAB's technology transfer office, the Bill L. Harbert Institute for Innovation and Entrepreneurship (HIIE), played a pivotal role in translating these innovations into global tools. HIIE facilitated the non-exclusive licensing of Nahm's technologies to 84 entities, including major pharmaceutical companies and contract research organizations (CROs).

The Institute also supported Nahm's founding of SunFire Biotechnologies, a Birmingham-based startup offering clinical-stage MOPA services and other analytical assays.

SunFire Biotechnologies has received \$1.85 million in funding, created 15 jobs, and positioned Birmingham as a hub for vaccine analytics. HIIE's commercialization strategy preserved Nahm's public health mission while enabling broad adoption and impact.

The global impact of Nahm's work is profound, as his innovations underlie FDA-approved pneumococcal vaccines now in use or in late-stage trials. His tools have accelerated global vaccine development through WHO sponsorship. His technologies have catalyzed a new industry, with CROs worldwide offering MOPA-based services. And his open-access approach has advanced global health equity and driven commercial growth.

To date, Nahm's intellectual property has generated more than \$6.5 million in revenue for UAB, reinforcing the value of open, non-exclusive licensing. His most notable patents include:

- US Patent 9,778,266 - A New Pneumococcal Vaccine Component to Combat an Emerging Pneumococcal Serotype
- US Patent 8,945,568 - Pneumococcal Serotype 6D

Nahm has received many accolades from some of the nation's most revered life science membership organizations, including being named a Senior Member of the U.S. National Academy of Inventors, a Fellow of the American Society of Microbiology (ASM) and a Fellow of the Infectious Diseases Society of America. Most recently, he was awarded the 2026 ASM Award for Applied and Biotechnological Research.

The NIH has called Dr. Nahm and his lab a "national treasure." But to the millions protected by the vaccines his work has made possible, he is simply a hero.

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