

North Carolina's Own, Anthony Dellinger, Co-Inventors Awarded Infectious Disease Patent

Risk Mitigation of Infectious Disease Transmission from Incidental and Intimate Contact Using Atomic Scale Molecular Disruption and Biocidal Halo-fullerenes Delivered via Topical, Flushing and Enteral Mechanisms, US Patent No. 11,638,720; May 2, 2023



Greensboro, North Carolina May 3, 2023 ([Issuewire.com](https://www.issuewire.com)) - Amidst the turmoil of the COVID-19 pandemic, North Carolina inventors at [AT Research Partners](https://www.atresearchpartners.com) diligently worked on innovative solutions to help prevent hospital-acquired infections (HAIs), but also broadly, urinary tract (UTIs) and sexually

transmitted diseases (STDs) [[US Patent No. 11,638,720](#)]. These cutting-edge biocides consist of atomic-scale matter that eliminates the risk of mutagenic side effects and circumvents antimicrobial resistance (AMR).

By utilizing atomic-scale reactions, these biocides kinetically destroy viral, bacterial, and fungal species without disrupting human anatomy or cell biology. Their potential applications include presurgical sterilizing scrubs, injections, phlebotomy, or IV therapy as preventive measures against HAIs. Traditional blood culture phlebotomy often results in contamination, making microbe identification unreliable and leading to non-specific antibiotic treatments. The UTI epidemic, with millions of daily cases, has been recently linked to meat consumption and the subsequent colonization of the urinary tract. The inventor's proposed solution is an aqueous suspension that employs diuresis to flush the urinary tract, potentially preventing both UTI (and STD colonization). This groundbreaking approach could revolutionize the prevention and treatment of various infections, ultimately benefiting public health.

Epidemiologists recognize that microbial infections are a major contributor to premature death (untimely patient demise), particularly with sepsis expected to become the leading cause of death worldwide. Sepsis is surpassing other causes of death such as cancer, heart failure, accidents, and other causes cumulatively. Recent findings on our microbe-laden planet have revealed that during the COVID-19 pandemic, mortalities often involved the presence of a secondary pathogen alongside the coronavirus. This insight underscores the urgency to develop innovative solutions to combat microbial infections and improve global health outcomes.

Regionally, Dellinger, a renowned polymath and Renaissance scientist in the Piedmont Triad, serves as an adjunct professor at the Joint School of Nanoscience and Nanoengineering (JSNN). Amongst the first to graduate from the Nanoscience program, he now teaches popular courses such as Nanomedicine and Advanced Topics in Molecular Biology. These popular auditorium-style classes draw enrollees from JSNN as well as graduate and undergraduate students from North Carolina A&T and UNC Greensboro.

In addition to his enterprise and academic roles, Dr. Dellinger is a prolific inventor having received six USPTO citations since the pandemic began. Speaking about regional provenance, "Our hardscrabble childhoods and ancestry gave us cleverness and skills that make us all inventors. Knowing the ropes of intellectual property will help diversify our rurally rooted economy, technologically" — "Our unspoiled youth hereabouts grow up using imagination with out-of-doors boating, fishing, and sandlot sports." He incorporates his expertise in the invention process into his teachings, as he personally, files, and prosecutes inventions using the distinguished USPTO pro se process. "We must teach our doctoral and undergraduate scientists and engineers, as well as STEM students of all ages about 'cognitive property' and 'thinking bigger' to fulfill domestic innovation goals and bolster STEM education throughout America. The newly appointed Director (Kathi Vidal) of the USPTO recently announced a new domestic patent goal increasing invention 4-fold imploring educators "with a new technology call to arms" [[USPTO Press Release, 2023](#)]. Dr. Dellinger recognizes that aspiring young academics often have a strong interest in intellectual property but may lack the practical knowledge required for successful inventorship. By sharing his experience and skills, he aims to empower the next generation of scientists who are driven by a desire for public good and invention notoriety. This fifth invention since the pandemic has an academic foundation and helps reinforce Greensboro, North Carolina as a rising innovation *hothouse*. *Hothouse—moreover*, because Dellinger has recently learned that a 6th utility patent will be forthcoming in weeks.

Recently, a prominent UK economist, Jim O'Neill, was appointed by the UK Prime Minister to investigate the growing burden of sepsis. His published reports highlight the devastating impact of

sepsis on morbidity and mortality, as well as the staggering costs of AMR reaching hundreds of trillions of dollars. O'Neill has since been elevated to the title of Lord Jim O'Neill in recognition of his contributions. Despite these acknowledgements, the incidence of infectious diseases has not significantly declined. While understanding the numbers and their implications may earn one a prestigious title, the ability to eradicate bacteria requires a different set of skills altogether. In this context, the scientific and technological advancements made in North Carolina are of critical importance in the global fight against infectious diseases.

USPTO Patent: [Risk Mitigation of Infectious Disease Transmission from Incidental and Intimate Contact Using Atomic Scale Molecular Disruption and Biocidal Halo-fullerenes Delivered via Topical, Flushing and Enteral Mechanisms, US Patent No. 11,638,720; May 2, 2023](#)

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