



# Explore

## A Quarterly Publication

**YouFirstServices**  
GROUP OF COMPANIES

DEVELOPING SCIENCE INTRODUCING TECHNOLOGIES

### You First Services Updates

It has been a very successful few months for You First Services Inc. The company acquired Buffalo Bio-blower in order to expand its room surface sterilization program to have a comprehensive surface and air sterilization program. Dr. John Lordi, PhD, an expert in the patented technology will lead the program. YFS have had substantial success and achievement in all the fronts. Lubricity dry mouth spray has been approved to be marketed in Australia and India in addition to European union, Canada and US. YFS is very excited to announce that it successfully negotiated with the national chain, Walgreens in order to put Lubricity on their over 6000 store shelves by spring. This is in addition to its availability on Amazon. The negotiations with CVS is in advanced stage. Another product Metaqil is picking up great momentum in sales with the help of very good marketing strategy. The clinical study with Metaqil is soon to be finished and the regulatory steps are underway for 510(k) submission to FDA. GloTran, the cleaner disinfectant of semi-critical /non critical devices is passed all its efficacy validation with flying colors. GloTran successfully killed an array of bacteria and disinfected various devices including devices having hinges and lumens with six log efficiency. With the marketing team and strategies in place GloTran is ready for production at the newly leased over 6000 sq. Ft space at 485 Cayuga Rd. The Pilot plant of YFS Pharma is ready to start manufacturing pending regulatory approval. YFS is very pleased to have increased the number of employees to 25 and with the plan of setting up a marketing call center the



number will increase by 10. The regulatory team works diligently to secure all the trade marks for various products and brands along with many international marketing approvals. All the clinical studies with our products are either getting started or nearing completion. These successes can be achieved only with the support from our collaborators and the dedication of a team of staff members including world class scientific researchers.

### SteriSpace

Expanding the disinfection program, You First Services recently acquired a novel patented



air sterilization technology. This technology uses compressive heating of a continuous airflow to destroy bacterial spores, vegetative bacteria and viruses. Developed in collaboration with the department of defense (DoD) through a series of DOD funded programs, prototypes of various sizes have been designed, built and tested. Independent testing has conclusively demonstrated that these prototypes kill >99.9999% of all airborne biological threats. This technology is scalable to sterilize air of a small closed space of tens of cubic feet per minute (CFM) to a whole building requiring thousands of CFM. In addition to applications in healthcare settings SteriSpace has a wide range of applications in military and non military settings. In military and Homeland Security it

can be used in the collective protective needs in biological or chemical warfare

The SteriSpace technology will isolate or quarantine of patients with highly contagious or infectious disease such as TB or a virus like SARS, which can be brought in from other countries. The protection can be for a room in a hospital or in an emergency shelter in a combat zone. Sterispace has applications in transportation, pharmaceutical industry, and agriculture etc. One of the first products that will be developed for the SteriSpace family is a device to be combined with isolator systems employed in biopharmaceutical manufacturing. This will enable the safety of the people from exposing themselves to hazardous chemicals while

# STERISPACE

maintaining the sterility of the manufacturing process. This has the capability of cleaning air of environmental pollutants like Ammonia, Carbon Monoxide etc. , with the addition of a catalyst to the device. SteriSpace has applications in Air lines, Cruise ships, school busses etc.

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## NEW TECHNOLOGY-for Air Sterilization



**John Lordi, Ph.D.**  
**Senior Vice President, Engineering**

You First Services Inc., recently acquired Buffalo Bioblower Technologies in order to develop a comprehensive room sterilization program, SteriSpace. The novel device acquired, called a bioblower, was designed to kill airborne biological contaminants. This technology uses compressive heating of a continuous airflow to destroy bacterial spores, vegetative bacteria and viruses. In a series of DOD funded programs, prototypes of various sizes have been designed, built and tested. Independent testing has conclusively demonstrated that these prototypes kill >99.9999% of all airborne biological threats. Positive or negative pressure can be maintained for protection or isolation. The addition of an optional catalyst can eliminate select chemical agents, environmental pollutants, and organic particles. The technology can be integrated into air handling or HVAC systems.

The technology is scalable for airflows from tens to thousands of cubic feet per minute (CFM). Technical development efforts have been directed at business opportunities in the military and Homeland Security for collective protection, and also for decontamination of vehicles both military and nonmilitary, including aircraft and surface vehicles. Design and testing of units has been also directed at applications in healthcare, for quarantine of infectious disease and protection of immune-compromised patients, as well as collective protection of animals in agricultural settings. Other applications include providing clean air in office buildings and industrial plants.

The Bioblower technology will be integrated into the You First Services SteriSpace products. When combined with You First Services surface sterilization capabilities, it can be used to provide a patient in a healthcare facility with a room free of biological contamination. In addition, with the addition of a catalyst to the device, it can provide protection against environmental pollution in areas with poor air quality.

One of the first products that will be developed for the SteriSpace family will be a device that can be combined with isolator systems employed in biopharmaceutical manufacturing. Another will be a unit to provide for the isolation or quarantine of patients with highly contagious or infectious disease such as TB or a virus like SARS, which can be brought in from other countries. The protection can be for a room in a hospital or in an emergency shelter.

## Air Pollution in Asia



**Karthik Kumar**  
**International Marketing Associate**

When people think of the rapid industrialization and growth of developing countries in South-East Asia, and those cities which are causing a significant environmental impact. Out of the world's 15 worst cities for air quality, seven are located in India. According to research published by the World Economic Forum, in Delhi the levels of particulate matter in the air found to be six times the limit considered safe by World Health Organization (WHO).

In 2013 the WHO's International Agency for Research on Cancer (IARC) conducted an assessment in which it concluded that outdoor air pollution is carcinogenic to humans. WHO estimates that in 2012, around 72% of outdoor air pollution-related premature deaths were due to ischemic heart disease and strokes, while 14% of deaths were due to COPD (chronic obstructive pulmonary disease) or acute lower respiratory infections, and 14% of deaths were due to lung cancer.

In India's capital New Delhi the pollution reached to a point where the Indian Medical Association had to declare a public health emergency with levels reaching more than 30 times the limit set by the WHO. The schools were shut down to minimize children's exposure to smog, construction projects were halted, trucks were banned from entering the city. Delhi has introduced many pollution control measures over the past few years, however, it has had a hard time enforcing some of the major causes of the decreased air quality.

The air quality readings in some parts of New Delhi were measured at a level of 1,000 on the U.S. Embassy air quality index, the maximum value measurable by the instrument. This is equivalent to smoking 44 packs of cigarettes per day! This measure is based on the concentration of fine particulate matter in the air, or PM 2.5, per cubic meter. According to the Center for Disease Control (CDC), the most damaging particles to people's health, are those with a diameter of less than 10 microns ( $\leq$  PM10), which can travel deep inside the respiratory tract, and contribute to decreased lung function. These particles are what reduce visibility and cause the air to look cloudy or hazy when their levels are high. Chronic exposure to these particles causes increased risk of developing cardiovascular and respiratory diseases, as well as lung cancer. According to the medical journal, the Lancet, it is estimated that approximately 2.5 million Indians die prematurely each year due to air pollution, compared to 1.8 million premature deaths in China. People with breathing and heart problems, children and the elderly are particularly sensitive to PM 2.5.

Respiratory diseases like asthma, COPD etc. are emerging as major health problems, especially in low- and middle-income countries, which already shoulder much of the burden of these diseases. These countries account for almost 90% of all COPD deaths. The most common symptoms of COPD are breathlessness, chronic cough, and sputum (mucous) production. Daily activities, such as walking up a short flight of stairs, or carrying a moderately heavy bag of groceries, can become very difficult as the condition gradually worsens. COPD becomes apparent later in life. Since the effects of air pollution are not immediately experienced, it results in the tendency to overlook the long-term effects of air quality on one's health.

We need to develop innovative technologies to mitigate this problem in residential places as well as transportation devices.

## Dangers of Kids' Diesel Exhaust Exposure in School Busses

### Bindukumar Nair Ph.D. Principal Scientist

High efficiency, durability, and reliability together with their low-operating cost make diesel engines the most preferred ones for heavy-duty vehicles. In addition to the widespread use of these engines with many advantages, they play an important role in environmental pollution problems worldwide. Diesel exhaust is a major source of combustion particles that contribute to poor air quality worldwide. Diesel engines are considered as one of the largest contributors to environmental pollution caused by exhaust emissions, and they are responsible for several health problems as well. Many policies have been imposed worldwide in recent years to reduce negative effects of diesel engine emissions on human health and environment. The four main pollutant emissions from diesel engines are carbon monoxide-CO, hydrocarbons-HC, particulate matter-PM and nitrogen oxides-NOx. Diesel exhaust also consists of a complex mixture of chemicals which contain known carcinogens including formaldehyde and benzene.[1] Many researches have been carried out on both diesel exhaust pollutant emissions and after treatment emission control technologies. They make up a significant portion of ambient air pollution. Particulate matter from diesel engines accounts for 26 percent of total air pollution from fuel combustion and 66 percent of particulate air pollution from on-road sources (American Lung Association, 2008). Since almost all school buses are operated with diesel engines, diesel engine exhaust can thus also be a source of concern, specifically with regard to exposure to children. Diesel particulate matter (DPM) is a complex and unhealthy mixture of inorganic and organic carbon particles with adhered toxic substances and metals

Pollution exposure may be particularly high for children who ride busses. Air pollution concentrations inside mobile sources may be as much as 10 times background ambient levels. Diesel emissions collect through mechanisms such as direct flows from leaks or cracks in the crankcase or exhaust system. Such leaks or cracks may be more common in school buses than in other vehicles, as school bus engines are often less regularly maintained [2]. Adar et al.[3] installed pollution monitors in a subset of the vehicles in a study. Their estimates suggest that within-bus concentrations of harmful particulates were more than twice roadway concentrations and 4 times ambient levels. Related studies found that within-school bus concentrations of particulate matter and air toxics were 4–12 times higher than ambient levels.

Diesel pollutants are reported to have adverse health impacts. Exposure to particulate matter (PM) emitted with diesel exhaust has been associated with various health effects, especially in children, including respiratory allergies, decreased lung function, bronchitis, and exacerbation of existing childhood asthma. Diesel-engine exhaust is also listed as a potential carcinogen by the U.S. EPA (2002 Particles aerosolized by diesel-powered vehicles are mainly in the ultrafine size range ( $<0.1 \mu\text{m}$ ), which makes them capable of penetrating the lower [4] and translocating through the blood-brain barrier. Nitrogen oxides cause ground-level ozone, and high ozone concentrations are associated with aggravated respiratory illness and increased respiratory symptoms. All children are potentially susceptible to the adverse effects of particulates and ozone (Committee on Environmental Health, 2004. Of particular importance to children is the established association between short-term exposure to traffic related atmospheric pollution (TRAP) and exacerbation of asthma[5], as well as emerging evidence linking long-term exposures to reduced lung growth [6], incident asthma [7], obesity [8], and neurocognitive deficits[9]. These exposures and potential health effects are largely preventable: available control technologies can substantially reduce emissions from heavy-duty diesel bus engines, reducing in-cabin concentrations of TRAP. **Efforts to clean up diesel engine emissions from school buses are likely to have tremendous societal benefits.**

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## Our Success

## Product Updates

You First Services Inc. successfully diversified its portfolio by acquiring and developing technologies in order to solve the existing problems in the health care.

## GloTran™

The GloTran Plasma Cleaner Disinfecter was independently tested at an authorized laboratory. GloTran was able to kill pathogens like MRSA, *C. difficile* and other vegetative bacteria found in the non critical medical devices. According to the standard product definitions set forth by the US Environmental Protection Agency, the GloTran is classified as a "Pesticide device".



This EPA product classification is the basis for You First Services (EQM Technologies) legal entry into the commercial market. It is now possible to make various product "indications for use" claims as a pesticide device. To date, the disinfection tests performed at this lab showed that the GloTran "pesticide device" does provide a 5 to 6 LOG kill, of clinically relevant bacteria on surfaces representing stainless steel and plastic medical items. Even better, other prior results in an independent sterilizer

validation lab showed that the most difficult challenges (hardy process resistant spores), could be killed to more than a 6 LOG reduction inside the GloTran. The sterilizer feasibility testing included complex and challenging medical devices with hinged surfaces (medical grade stainless steel scissors), knurled surfaces (cross-hatched handles of stainless steel), stainless steel coupons, and long and narrow lumens (greater than 1 mm representative of endoscopes). The spores were placed on or inside the devices at the most difficult to penetrate locations; and results revealed that GloTran does provide a 6 LOG kill in a half-cycle. This supporting evidence suggests that the product is capable of providing more than just disinfection of simple surfaces. We conclude after the disinfection tests and gathering the final scientifically-supported evidence, we confirmed that the system does kill common pathogens found in the clinic, including fomites such as *E. coli*, *A. baumannii*, MRSA, *S. enterica*, *S. pneumoniae*, *E. faecalis*, and *T. interdigitale*. These are typically easier micro-organisms to kill as compared to the spores, based on popular scientific literature and common micro-biology practice. According to Michael DuVal, Senior engineer, GloTran project "this is a very exciting time at You First Services. We are transitioning from a design and engineering company and into a Sales and Marketing oriented company". GloTran is now ready for mass production and commercialization.

## SteriSpace™

The SteriSpace air purification system is a unique, patented device that uses compressive heating to eliminate the biological and chemical contaminants from continuous large

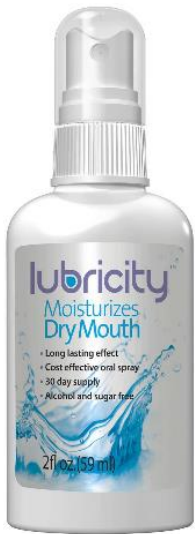
volume flow of air. The concept is based on a novel device, blower, which was developed to kill airborne biological contaminants. It uses compressive heating of a continuous airflow to destroy bacterial spores, vegetative bacteria and viruses, fungi etc. In a series of Department of Defense (DOD) funded programs, prototypes of various sizes were designed, built and tested. Independent testing has conclusively demonstrated that these prototypes kill >99.9999% of all airborne biological threats. Positive or negative pressure can be maintained for protection or isolation.



The technology is scalable for airflows from tens to thousands of cubic feet per minute (CFM), and is suitable for a wide range of applications. The 300 CFM unit can purify air in a normal room while the 5000CFM unit can serve a whole building. The potential applications of SteriSpace are in transportation including school busses, cruise ships airplanes, healthcare, agriculture, pharmaceutical manufacturing etc. This technology does not use filters to trap the contaminants; thus, the logistics associated with HEPA filtration are not a concern. This eliminates the periodic HEPA filter change-out with the associated captured biohazard in the filter and filter disposal. The addition of an optional catalyst can eliminate select chemical agents, environmental pollutants, and organic particles.

## Lubricity®

Lubricity continues to be widely appreciated by people suffering from dry mouth. Lubricity® received permissions to be marketed in Canada, European Union, India and Australia in addition to United State. All necessary contractual agreements are completed with national pharmaceutical chain Walgreens so that Lubricity will be available on their store shelves in about 6000 stores across US.



Negotiations with other chain stores like CVS are in advanced stages. It is now available online on Amazon for purchase. We are very pleased that Sjogren's foundation officially endorsed Lubricity and recommended to its patrons. premarket

notification corresponding authorities from each counties. Further Lubricity® is being evaluated for its efficacy in dry mouth caused by various conditions through clinical studies. are at different stages in the progress

## Metaqil™

MetaQil™ ([www.metaqil.com](http://www.metaqil.com)) oral rinse, packed in a convenient to carry 2 oz bottle, for the relief from metallic taste and oral mucositis in the mouth caused by treatment of cancer or due to various prescription drugs is steadily being marketed across US. It



received approvals from Canada and India as well in addition to US. The regulatory team is working with other countries where the approvals are being sought. The clinical study to test the efficacy of this oral rinse, , in

alleviating metallic taste and comforting mucositis is undergoing at the School of Dental Medicine, University at Buffalo. The design of a 8 oz bottle is underway and the production and launch soon to follow. The steps are taken to seek FDA clearance for Metaqil with the completion of the clinical study..

## Clinical Studies

### Metallic Taste

Subjects taking chemotherapeutic agents often do not comply well with their dosing regimen since many of these medications cause a metallic taste in the mouth. This study well progressing and the enrollment is open to qualified subjects in the School of Dental Medicine, University at Buffalo under Dr. Sebastian Ciancio, Distinguished Professor and Chair of Department of Periodontics has two key objectives. The primary intent is to determine the effectiveness of Metaqil™ oral rinse in reducing the metallic taste and oral mucositis in the mouth associated with various chemotherapeutic agents. This study will also confirm that the test formulation is safe for daily use in home oral care over a one-month treatment period. For adults 18-75 to participate in the study may call (716)829-2885

### Dry mouth in sleep apnea

Patients suffering from obstructive sleep apnea (OSA) often wake up with a dry mouth during the night or in the morning and impacts quality of life. As patients with OSA spend most of their sleep time desperately seeking for air, it is not surprising that they wake up with a dry mouth, as the instinctive physiological response is to open the mouth to allow as much air in as possible. Saliva has important functions in protecting the hard and soft tissues of the oral cavity from acids and pathogenic microbes. This cross-over group, randomized, study enrolls subjects from the sleep clinic of Veterans Administration (VA) Hospital of WNY under the IRB approved protocol. This study is expected to finish very soon.

### Dry mouth Diabetics

Xerostomia (dry mouth) has been reported to be a common complaint of patients with diabetes. This clinical study is to test the ability of an HA formulation to alleviate the dry mouth in diabetic patients. The study is approved by Saint Louise University, Saint Louise, MO, and done at Division of Endocrinology, Diabetes and Metabolism, School of Medicine, SLU. The cross-over group, randomized, study enrolls subjects from the diabetic clinic.



The YFS pharma is on its way to be operational as a Current Good Manufacturing Practice(CGMP) compliant manufacturing unit. The pilot lab for the YFS pharma is ready for operation pending registration. All required instruments and facilities set up . Adherence to the CGMP regulations assures the identity, strength, quality, and purity of drug products by requiring that manufacturers of medications adequately control manufacturing operations. This includes establishing strong quality management systems, obtaining appropriate quality raw materials, establishing robust operating procedures, detecting and investigating product quality deviations, and maintaining reliable testing laboratories. It is expected to start the manufacturing in the beginning of 2018

## WELCOME NEW EMPLOYEES

Research  
Collaborators

**Alexandra Helms**  
Multimedia Designer



**Danielle Washington**  
Quality Specialist



**Sebastian Ciancio, D.D.S.**

Dr. Ciancio is a Distinguished Service Professor and Chair, Dept. of Periodontics & Endodontics, Adjunct Professor of Pharmacology at the University at Buffalo Medical and Dental Schools. He is the Director of the Center for Dental Studies at Buffalo. He is also the past president of the American and International Academies of Periodontology, has authored over 150 articles, and in 2015 received the Norton Ross Award from the ADA.



**Michael Manuszewski.**

Michael Manuszewski is a registered pharmacist and the owner of Island Prescription Center, Grand Island, NY. He graduated from SUNY at Buffalo, School of Pharmacy in 1987, with a B.S. in Pharmacy. He has held many positions in retail pharmacy, including chain, closed, and independent environments. He also serves as a preceptor for many pharmacy students from D'Youville College of Pharmacy, and SUNY at Buffalo School of Pharmacy and Pharmaceutical Sciences. Through collaboration he exemplifies to his students the importance of taking the time to get to know your patients, providing them with comprehensive knowledge of their medications, in addition to helping them better understand their disease states.



YFS Foundation is expanding its mission objective of girl child education to African continent. It signed an MOU with Hope for Sisi's Kids, Inc., (HosiKids), a Not-for-Profit Corporation registered as a 501 (c) (3) charitable organization to support Bawaleshie Elementary Girls schools in Ghana. The program will start with one school and to expand gradually.



YFS Foundation is very glad to announce that it signed the MOU with IIMPACT ([www.iimpact.org](http://www.iimpact.org)) a non-governmental organization in India whose primary focus is the education of girl children from socially and economically disadvantaged sections of society. This year YFS Foundation is planning to sponsor 210 girls including the 60 children it supported last year. The new learning centers are located in the rural villages of Jaunpur in Uttar Pradesh near Banaras. In addition the Foundation is setting up various programs for the intellectual development of the kids attending the learning centers.