

Silver News

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An Interview with Steve Higgins of the Royal Canadian Mint



Steve Higgins

“The ETR program is unique to the Royal Canadian Mint. No other national mint offers an exchange-traded investment that is backed by physical silver.”

Steve Higgins is responsible for the design, development and management of exchange-traded receipts (ETRs) at the Royal Canadian Mint. He has overseen the program since the launch of the gold ETR in 2011 and through the launch of the silver ETR in 2012. Before joining the Mint in 2009, Higgins was the Manager, Corporate Performance, at Sustainable Development Technology Canada, which makes early-stage investments in the clean-tech sector. He completed his MBA at HEC School of Management in Paris and his Bachelor of Science and Business at the University of Waterloo.

Following is an edited interview with Steve Higgins.

Silver News: Explain the structure of the Canadian Silver Reserves, stock symbol MNS (Toronto Exchange). How is it backed, how is it traded, how/where is the physical silver held?

Mr. Higgins: Each exchange-traded receipt (ETR) represents a direct interest in physical silver bullion held at the Royal Canadian Mint. The ETRs differ from ETFs or other funds in that there is no entity structure: investors directly own the silver. We keep the silver in a variety of forms including our finished products: 1000 ounce bars; 100 ounce bars, one ounce Silver Maple Leaf coins and the intermediary products like blanks, coils and grain. This allows us to offer investors a choice of form if they choose to withdraw their silver.

SN: The Mint started with a gold instrument, MNT. What was the impetus for a similar silver product?

Mr. Higgins: Our gold ETRs (Toronto Exchange MNT) launched in November of 2011 and was very well received. We issued \$580M USD worth of gold ETRs - which made it the largest IPO on the Toronto Stock Exchange that year. On the heels of this successful launch, and after receiving numerous inquiries, it was clear that investors wanted silver, too. Silver is a massive part of our business so we were eager to offer a silver ETR. In November, 2012 we launched the silver program and raised US\$100M to buy 3.1 million ounces of silver.

SN: If an investor wants to redeem his/her shares will they receive physical silver? In what form is it and how is the transaction handled?

Mr. Higgins: Once a month investors can redeem ETRs for newly fabricated one-ounce Maple Leaf coins, 100-oz. bars and 1000-oz. London Good Delivery bars. Investors can submit a request through their brokers and specify what products they want and give us delivery instructions so they can arrange through a list of major armored couriers. There is a CAD\$100 fee and fabrication fees that vary depending on the form of silver bullion. We have one of the lowest minimum redemption amounts; investors must redeem a minimum of 5,000 ETRs or around 3,000 oz. of silver.

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SN: What are the advantages to shareholders of the MNS instrument?

Mr. Higgins: The instrument offers the most flexible set of redemption rights for coins or bars, secure storage with a government backing and an all-in annual service fee of 45 bps (0.45%). MNS provides investors with a secure, convenient and low-cost means of direct physical ownership of silver that is stored at the Royal Canadian Mint with a proud history of over 100 years of refining and custodial experience.

SN: How does the Mint convert a shareholder's cash purchase into physical silver... daily, upon receipt of cash, etc.?

Mr. Higgins: The Mint issues new ETRs from time-to-time when there is demand rather than on a daily basis. This keeps handling costs down. When new receipts are issued, the silver is bought immediately and stored in our facility. On a day-to-day basis, investors buy and sell ETRs through the Toronto Stock Exchange from other holders or the market makers. Market makers ensure investors can buy or sell when they need to. However, if an investor wants to buy several million dollars worth of silver they can contact us to discuss their purchase.

SN: What are the Mint's fees associated with the buying and selling of silver for MNS?

Mr. Higgins: The Mint doesn't charge any ongoing fees for buying and selling silver. We only charge the 0.45% per year. We don't buy and sell day-to-day so there are no costs associated with this.

SN: What is the breakdown between institutional and retail owners? Are you satisfied with the mix?

Mr. Higgins: The breakdown is difficult to pin down. Because investors own silver and not an entity, there are no requirements for institutions to report their holdings for control purposes. Having said that, I believe our silver ETRs are over three-quarters held by retail investors. The gold ETRs have traditionally had more of an institutional following with between a third and half being held by institutions.

SN: Do any other mints offer a similar product?

Mr. Higgins: The ETR program is unique to the Royal Canadian Mint. No other national mint offers an exchange-traded investment that is backed by physical silver. It's also worth noting that, globally, ETRs are the only exchange-traded bullion investments issued by an agent of a sovereign government.

SN: Where can readers get more information about the silver product?

Mr. Higgins: Investors can get details at www.reserves.mint.ca and we may also be reached toll-free at +1-866-677-1477 or in Ottawa, Canada, at +1-613-991-1456.

SN: What else would you like our readers to know?

Mr. Higgins: We really appreciate the work of the Silver Institute; it's a great resource for the industry. We love silver and we are going to keep providing innovative ways for people to invest in and enjoy silver. We want to continue to grow our ETRs and are looking for opportunities to bring ETRs to Europe and Asia. Stay tuned.

United States National Institute of Standards and Technology Makes Sure Scientists are on the Same Nanosilver Page

When studying a chemical, especially a new one, it's important that all testers worldwide use the same exact sample in order to produce and share their findings with others who also are working with it.

In order to help those experimenting with silver nanoparticles, the United States National Institute of Standards and Technology (NIST) has issued a [new silver nanoparticle reference material](#) because silver nanoparticles are increasingly being incorporated into a growing number of consumer and industrial products for their antimicrobial properties, according to NIST officials.

The new NIST test material is believed to be the first of its kind to stabilize the highly reactive silver particles in a freeze-dried, polymer coated, nanoparticle cake for long-term storage.

"Nanoparticulate silver is a highly effective bactericide. It is, by some estimates, the most widely used nanomaterial in consumer products. These include socks and shoe liners (to combat foot odor), stain-resistant fabrics, coatings for handrails and keyboards, and a plethora of other applications," NIST officials noted in a prepared statement. "The explosion of nanosilver products has driven a like expansion of research to better understand what happens to the material in the environment."

"Silver nanoparticles transform, dissolve and precipitate back into nanoparticles again, combine or react with other materials but our understanding of these processes is limited," says NIST chemist Vince Hackley. "However, in order to study their biological and environmental behavior and fate, one needs to know one is starting with the same material and not some modified or oxidized version. This new reference material targets a broad range of research applications."

The NIST material uses polyvinylpyrrolidone (PVP), a polymer approved by the Food and Drug Administration for many uses, including as a food additive. The freeze-dried PVP-nanosilver cakes are flushed with an inert gas and sealed under a vacuum. Mixing the cake with water reconstitutes the original suspension.

The particles have a diameter of 75 nanometers. NIST officials expect the material to be stable indefinitely when properly stored and handled, but they will continue to monitor for substantive changes in the values.



NIST's new silver nanoparticle reference material is designed for extended shelf life to support environmental health and safety studies.

EPA Response on Nanosilver Petition for Rulemaking Request

In a response seven years in the making, the U.S. Environmental Protection Agency (EPA) in March 2015 has said that the government agency will treat products containing silver nanoparticles as pesticides under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) only if the products are intended as pesticides. In addition, the EPA has rejected claims from the International Center for Technology Assessment (ICTA) and other petitioners who claimed that all products containing nanosilver are categorically pesticides and should be regulated as such.

Rosalind Volpe, D.PH, Executive Director of the Silver Nanotechnology Working Group (SNWG), of which the Silver Institute is a founding member, confirms that “EPA agrees FIFRA provides sufficient authority to consider nanosilver pesticide applications and also pledges to continue its current enforcement approach on a case by case basis.”

The EPA noted in its response:

“Specifically, EPA is granting Petitioner’s request to treat as pesticides under FIFRA products containing nanoscale silver if intended for pesticidal purposes, as defined in FIFRA and EPA regulations, and subject to other regulatory exemptions and controls. EPA agrees that all relevant information will be considered in making this determination, even in the absence of explicit pesticidal claims.”

The EPA also noted that it will continue to apply its statutory and regulatory criteria as to what is a pesticide on a case-by-case basis. In addition, Volpe notes that “since EPA still believes that nanosilver *may* have a toxicity profile different from conventional silver, it will continue to treat each application on a case by case basis.”

“In general, the response does not alter EPA’s legal position with regard to nanosilver and its regulation under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), or otherwise contribute any new interpretations of existing EPA pesticide registration or enforcement policy,” according to [Lynn L. Bergeson](#), Managing Director at Bergeson and Campbell.

Silver Jewelry Sales Rose in 2014, Offered Best Margins During Holiday Period

Silver jewelry sales in the United States rose in 2014, according to an online survey fielded by *National Jeweler* magazine on behalf of the Silver Institute’s Silver Promotion Service (SPS).

The survey, titled [2014 Silver Jewelry Sales Results Report](#), noted that “silver jewelry has become an increasingly important category for many jewelers for the past several years, both in driving sales and providing margin.”

The survey showed that:

- 67% of jewelry retailers said that their silver jewelry sales increased in 2014, with an average increase of 17%;
- Retailers said that their silver jewelry sales, as a percentage of their overall jewelry sales, were on average 34% of their unit volume and 30% of their dollar volume;
- 89% of retailers are optimistic that the current silver boom will continue for the next several years;
- Retailers reported that female self-purchases provided the best selling opportunity and the 20-40 age group bought the most silver jewelry in 2014.

The report also revealed that silver offered the best maintained margins during the holiday season at 43%, followed by Diamond Jewelry, 31%; Bridal Jewelry, 19%; Gold Jewelry, 7% and Platinum Jewelry at less than 1%.

Stay Healthy, Wear a Scough

Taking a cue from those in Japan who routinely cover their faces with surgical masks to keep germs from spreading, a Brooklyn company is taking the germ-fighting idea into the fashion world. Scough – a combination of ‘scarf’ and ‘cough’ – is a stylish scarf with a pocket in front for a silver-impregnated activated charcoal filter. The company says it traps and kills germs as well as pollutants.

The filters last up to three months and cost \$20 each. The scough comes in a scarf version for \$49 and a smaller bandana version for \$29. They are both washable after removing the filter, which should be washed separately with filtered water and air dried.



Silver keeps Scough wearers healthy. Click on the photo to see how it works.

SCOUGH

Silver Ink Makes Low Cost Agricultural Sensor Possible

SenSprout, a leaf-shaped sensor that allows farmers to remotely measure rainfall and soil moisture levels, uses silver inks to produce printed circuit board sensors at low cost.

Current water sensors cost over US\$100 without monitors or data loggers, according to the company's founder, Kazuhiro Nishioka. The SenSprout sensor costs less than half, not only because of the inexpensive printed circuit board construction but also because it connects to an app on a smartphone. No additional equipment is necessary.

Due to the use of printing technology, SenSprout can be manufactured at low cost in mass production and in small lots, company officials say. The sensor is solar powered so there is no battery replacement and no danger of leakage into the soil.

The SenSprout sensor was recently shown at SXSW (South by Southwest Conferences & Festivals), where company officials said that they hope to produce a sensor that will not only check soil moisture but nutrients, too.



Click the photo for demonstration of SenSprout

Tiny Battery May Help Implant Release Antibacterial Silver Ions on Cue

Medical investigators for several years have been testing the ability of silver ions in implants to ward off infections (See [Silver Tested in Bone Implants](#), *Silver News*, June, 2014). Now, researchers at the North Carolina State Department of Industrial and Systems Engineering have taken it to the next level. They are studying ways to apply a low-intensity electrical charge to a silver-titanium implant to increase the release of silver ions, thus giving the implant greater antibacterial power.

The power source, researchers suggest, could be a button-type battery, similar to a watch battery, which is integrated into the implant.

In tests, the implant showed a 99 percent drop in bacteria around the implant after 24 hours. After 48 hours, the area around the implant was bacteria free. The researchers, Assistant Professor Rohan Shirwaiker and doctoral candidate George Tan, are exploring the use of a smartphone app to control the battery and thus the release of silver ions.

In 2014, Shirwaiker, an engineer by training, was awarded the Best Young Investigator Research Poster Award at the American Academy of Orthopedic Surgeons (AAOS) -- Orthopedic Research Society Conference on musculoskeletal infections.

More than a million joint replacement surgeries are performed annually in the United States and infection control has always been an issue to which physicians pay close attention, because the cure can require surgery and long-term treatment with antibiotics. "Prosthetic joint infection (PJI) remains one of the most serious complications of prosthetic joint implantation," according to [guidelines](#) from the Infectious Diseases Society of America (IDSA). "The management of PJI almost always necessitates the need for surgical intervention and prolonged courses of intravenous or oral antimicrobial therapy."



NORTH CAROLINA STATE DEPARTMENT OF INDUSTRIAL AND SYSTEMS ENGINEERING

Rohan Shirwaiker and his team are exploring the use of a smartphone app to control the release of silver ions in implants.

Static Electricity May Power Wearables

As we move into the age of 'wearables' such as the new Apple Watch, the question arises as to how to power these devices. Batteries wear out and add weight, but what if we could power our wearables with the same power jolt that we get from walking across the carpet and touching a light switch?

Researchers in South Korea and Australia are harnessing the power of triboelectricity, the technical term for static electricity, which occurs when two different materials rub against each other and then separate. In the separating process, one material steals electrons from the other – the spark that we feel from our fingertips – but harnessing this tiny amount of electricity is tricky.

The mechanism is a pliable layer of two fabrics, one coated in silver and the other in silver, zinc oxide nanorods (100 nanometers wide and 1 micron long) and silicon rubber. When several sandwich layers are stacked and pressed together, they produce 170 volts and 120 microamperes, which may sound like a lot of voltage but the amount of current or amperes is extremely small. The power output is a little more than 1 milliwatt, which is enough to power about six light emitting diodes (LEDs) and a keyless remote entry for a car.

In testing, the fabric has withstood more than 12,000 cycles of compression and release.

Writing in the journal [Nano](#), the authors note: "In recent years, the field of wearable electronics has evolved at a rapid pace, requiring continued innovation in technologies in the fields of electronics, energy devices, and sensors. In particular, wearable devices have multiple applications in healthcare monitoring, identification, and wireless communications, and they are required to perform well while being lightweight and having small size, flexibility, low-power consumption, and reliable sensing performances."



Click on the photo to see how static electricity can power wearable devices.

Fogger With Silver Ion Formula Fights MRSA

A U.S. company fogged a house with a formula that includes hydrogen peroxide and silver ions in order to rid the residence of the antibiotic infection known as Methicillin-resistant Staphylococcus aureus, or MRSA, that had sent the family's 5-month old to the hospital -- where he spent almost two weeks on a ventilator before being discharged.

The company, [Sanosil International](#), treated the house for free as a precaution after being brought in by a family friend. "Hydrogen peroxide has long been used as an anti-microbial agent," the company notes in its technical literature. "The Sanosil formula contains hydrogen peroxide, which, in conjunction with other proprietary raw materials, is converted into an entirely new material. So, while basic hydrogen peroxide had limited killing mechanisms, efficacy and stability. Sanosil is a multi-mechanistic, extremely stable, broad-spectrum product."

This is the first time Sanosil has disinfected an entire house for MRSA, said David St. Clair, chairman of the company. The system is more commonly used to fight mold. A MRSA cleaning of this type would cost between US\$2,000 and US\$3,000, St. Clair told [Delawareonline.com](#). "It is the only fogging system in the U.S that is approved by the EPA," he said. "EPA approval is very, very important. You had to prove efficacy and safety and that remains very important in the health care market."

When used on surfaces, Sanosil Disinfectant requires no rinsing. Sanosil itself decomposes into water and oxygen and contains no chlorinated or brominated ingredients, he said.

The company's Halo Disinfection System uses a portable fogger a little taller than a kitchen trash receptacle. It is mostly used in doctor's offices and medical facilities, and was used in Nigeria during the Ebola epidemic to curb the spread of infection, company officials said.



This Halo Disinfection System uses silver ions in a fogging solution to clear MRSA and other bacteria from inside buildings.

Upcoming Events



World Silver Survey 2015

25th Anniversary

The Silver Institute will publish the 2015 *World Silver Survey* on May 6, 2015. More details will be announced soon. Register for the free audiocast at www.silverinstitute.org



14th China International Silver Conference 2015
16 - 18 September 2015
Shanghai, China

The Silver Institute is pleased to announce that the 14th China International Silver Conference (CISC) will be held in Shanghai, China, from September 16-18, 2015. The CISC is the most prominent global international silver conference and offers attendees an opportunity to meet with key Chinese and international silver market participants.



Silver Industrial Conference
Washington DC October 28-29

The Silver Institute will host the 2015 Silver Industrial Conference in Washington, D.C., on October 28-29. The event is dedicated to the metal's ever-growing role in the industrial world, and will bring together leading executives from throughout the wide-ranging silver industry and supply chain, to focus attention on future commercial and industrial developments, and the changing demands of the silver marketplace. More information will be available in the near future.

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