

A long, multi-arched bridge stretches across a body of water at dusk. The bridge is illuminated by a series of streetlights along its length, which create a bright, glowing path on the water's surface. The sky is a deep, dark blue, and the overall scene is serene and modern.

NBIF

**2015-2016
ANNUAL REPORT**

NEW BRUNSWICK INNOVATION FOUNDATION



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NBIF is
the bridge
between
R&D and
enterprise

Building an economy based on innovation starts with people. People with the passion and perseverance needed to turn ideas into innovations, and innovations into enterprise.

Whether it's for applied research, startups or R&D inside established companies, our aim is to do whatever it takes to find innovators the financial and professional support they need to succeed. To help them find their way across the bridge and win.



CATHY SIMPSON

A message from our Chairwoman

There's a reason why NBIF is listed in the top five most active venture capital funds of its kind in Canada again this year. It's because the New Brunswick business and research community understand how innovation paves the way for economic success and people are taking action. We all need to celebrate this!

We see the results of how the interconnectedness between college and university research, new startup companies, and R&D inside existing small-to-medium businesses is creating exciting, new opportunities for New Brunswick.

What we do works, and considering our \$73 million investment since 2003 has helped our innovators raise \$373 million, it's clear that many other funders believe so too. Our portfolio contributes over \$65 million per year to the province's GDP. However, if there's one thing we know, it is that innovative ideas,

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once deployed, need constant development for that growth to continue and stay relevant in the global marketplace. So, this year, we asked ourselves this question: of all the successes in our portfolio, **how can we help further develop ideas into commercial successes?** By turning our startups into scale-ups and supporting the next iteration of the R&D that got them there in the first place.

As a result, we have created new initiatives to enhance our strategy. One such initiative is to consider follow-on investments first and then **use our vast network to help our startups find the additional capital they need to scale up.** Scaling-up takes time and money, and not every startup will scale quickly, but we're ready to help them. We are also in the process of developing an online research services portal that will allow us to **connect more enterprises with the researchers they need to collaborate** to solve business problems through R&D. Connecting research with industry is crucial for our success.

As we embark on our 14th year, we continue to strive to create the best possible environment and conditions for student, researcher, and businesses alike to succeed!

NBIF PERFORMANCE SINCE INCEPTION (2003)

CATEGORIES

Invested by NBIF	
Leveraged capital	
Active portfolio companies	
Research projects supported	
Professors recruited	
Value of venture capital (VC) exits to date	
Percent return on venture capital since inception	

AMOUNT

\$ 73 MILLION
\$ 373 MILLION
41
429
61
\$ 11 MILLION
+ 46%



CALVIN MILBURY

OUR TEAM

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Investments

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Message from our President and CEO

Innovation is thriving in New Brunswick! A groundswell of momentum is creating recognition, excitement and results like never before. Our province is becoming a hotbed of innovation, and our innovators are right in the middle of it.

At NBIF, our mandate is to fuel that momentum by providing our innovators, researchers, and startup founders access to the risk capital, specialized expertise, and mentorship they need, at a time when so few others are willing to step up to the plate. Taking on risk is what we do at NBIF. We are the bridge between research and enterprise in New Brunswick. In doing so, we help to bring innovation from lab to marketplace where it impacts our economy.

Last year we invested \$11 million. Of that, \$6 million went to support applied research and talent recruitment at our colleges, universities and research institutes, while \$4 million were invested in 24 high-growth potential companies. We also issued 23 new Innovation Vouchers totaling \$1 million to help established companies conduct R&D at publicly-funded research organizations across the province. Together, these companies are changing the world from right here in New Brunswick, and NBIF has partnered with them to help them do exactly that.

Heading into next year, NBIF will continue to carry out its mandate with the same vigor and resolve as ever before, with a heightened focus on accelerating the commercialization of research, and a more proactive approach to helping our startup companies scale up. These two axes are paramount to us for enhancing our innovation ecosystem and creating a better New Brunswick.

INVESTMENT ACTIVITIES			
ALL FUNDS			
ACTIVITY	2015-2016	2014-2015	SINCE 2003
Applied Research	\$ 3,155,662	\$ 3,823,575	\$ 27,630,017
Startups & Growth Companies	5,204,308	5,248,028	25,335,692
Talent & Recruitment	2,842,757	3,353,948	20,060,224
NBIF INVESTMENT	\$ 11,202,727	\$ 12,425,551	\$ 73,025,933
LEVERAGED FUNDS	25,958,709	32,176,040	373,546,117
TOTAL IMPACT	\$ 37,161,436	\$ 44,601,591	\$ 446,572,050

Sitting is the new smoking.

Every year, North American trucking companies lose over \$750 million from drivers missing days due to chronic pain from sitting and slumping all day. As a result, fleet operators are looking for better ways to reduce medical costs, prevent accidents and lower sick days.

With 20 years of wheelchair design experience, the founders of Force 3 are preparing to commercialize a fully automated, pan-adjustable seat for professional drivers. Software allows clinicians to monitor and remotely adjust the seat based on operating system data.



We help **SMEs** increase their profitability through **R&D**

To spur innovation within established New Brunswick SME companies, NBIF provides up to **\$80,000 to cover 80% of an R&D project** with one of our publicly-funded research organizations.

Now in its third year, the utilization of the **Innovation Voucher Fund (IVF)** continues to grow at a robust pace, leaping from nine to 17 and **23 company projects** in FY 2015-2016, with a total of \$1.3 million. A total of \$350,740 was contributed by the recipient companies. All funds flow directly to the research teams.

This is just the beginning of **our plan for the IVF**. Our secondary strategy, now underway, is to identify innovations that can turn into **new spin-off companies**.



Shawn Leger, CEO and Darrell Mullin, CTO
Force3 Innovations

Force3 Innovation's seat technology is just the one example. A spin-off of Moncton's *Medichair*, the company's 2014 voucher led to the creation of a new business, and a \$100,000 startup investment by us. (See page 9.)

2015-2016	INNOVATION VOUCHER FUND			AMOUNT
	NEW INVESTMENTS			
	COMPANY	ORG	INNOVATION	
	G.E. Barbour Inc.	CCNB	Packaging & processing facility upgrade	\$ 80,000
	Clairitech Innovations Inc.	UdeM	Intelligent ventilation system for garages	80,000
	Confection 4e Dimension Ltée	CCNB	Arm for tubular sewing operations	80,000
	St. Isodore Asphalte Ltée	IRZC	Use of basalt dust as a fertilizer	80,000
	Island Fishermans Coop/ACPI	IRZC	Shrimp oil recovery system	80,000
	Savonnerie Olivier	UNB	Development of natural sunscreen	80,000
	Northern Harvest Sea Farms	HMSC	Improve salmon growth & development	80,000
	Bolero Shellfish Processing Inc.	CZRI	Eliminate sea cucumber toxin	80,000
	Smart Pods	UNB	Biomechanical & physiological benefit test	79,620
	TCI Manufacturing Inc.	CCNB	Automating production line	77,881
	HSF Foods Ltd.	RPC	Utilizing potato waste for anti-icing	70,991
	Los Cabos Drumsticks	CCNB	Drumstick weighting and pitch (Phase 2)	60,000
	Leading Edge Geomatics	CCNB	Adjustable aircraft LiDAR sensing system	56,252
	Thermopak	UdeM	Digital smart ordering for food industry	54,796
	Quoddy Savour Seafood Ltd.	HMSC	Sea urchin enhancement validation	49,924
	Strang's Produce	CCNB	Potato vodka production	48,479
	Therma-Ray	CCNB	Enclosure for radiant heating system	45,624
	Biopolynet Inc.	RPC	Design of superior iron ore pellets	39,957
	Contendo Training Solutions	NBCC	Contendo V.R. training enhancement	35,544
	Services Hall Ltée	CCNB	Improving the efficiency of harvester	27,588
	Coopérative forestière du N-O	CCNB	Dev. of liquids from camerise plant	21,181
	Services Hall Ltée	CZRI	Wild blueberry puree as a healthy snack	17,547
	Quality Engineered Solutions	UNB	Development of AeroShield	13,922
	NBIF INVESTMENT			\$ 1,339,306
	SME CONTRIBUTION			350,740
	TOTAL IMPACT			\$ 1,690,046

To fix or not to fix, that is the question.

INVERSA SYSTEMS manufactures unique equipment and software that allows industry to see inside and behind immovable objects without tearing them apart—enabling decision-making at a fraction of the cost.

Inversa first got off the ground after its founder won NBIF's 2006 Student Entrepreneurship Prize of \$25,000. After optimizing their prototype, Inversa became a startup in 2007 with a \$250,000 seed investment from us.

Today, with an additional \$350,000 from our Venture Capital Fund, the company has raised an additional \$650,000 from other investors and is now scaling up, winning new business across Canada and the United States.

The company has grown from two to 23 employees. Its three product lines for civil infrastructure, oil and gas production and asset condition assessment are positioning it for success around the world.



Helping founders go from startup to scaleup

Making venture capital investments in new startup companies is a big part of what we do. In the past, founders were required to find other investors before we would make our investment. We have turned this on its head. With the aim to transform our startups into scaleups, our investment team now actively participates in helping our founders find the investors they need to raise capital.

In FY 2015-2016, we made **18 new investments** in 16 of our existing portfolio companies, some to help founders scale up, and others to prepare for their next stage of growth.

Portfolio companies *Fiddlehead Technologies* and *Resson Aerospace* had major developments with multi-million dollar investments from other venture capital firms such as *Build Ventures*,

Rho Ventures, *BDC Capital* and *East Valley Ventures*. Co-creation and sales opportunities that will see their products and services used by agriculture giants *Monsanto* [NYSE: MON] and *McCain Foods*.

Using the \$3.3 million we invested, **our founders** raised an additional \$13.2 million.



Shawn Carver, CTO and David Baxter, President
Fiddlehead Technology

2015-2016		VENTURE CAPITAL FUND	
		NEW INVESTMENTS	
	COMPANY	PRODUCT	INVESTMENT
	Populus Global	National level Health Information Management System	\$ 500,000
	Fiddlehead Technologies	Advanced cost predicting software	400,000
	Qimple	Advanced online HR recruitment software	400,000
	Inversa Systems	Diagnostic imaging tech for industry	350,000
	Envenio	Advanced computational fluid dynamics software	300,000
	Eigen Innovations	Advanced optic sensors for manufacturing	250,000
	Knowcharge	Electro static discharge protection via paper products	175,000
	Hotspot Merchants	Parking payment app and marketing tool	150,000
	Xiplinx	Production worker productivity monitoring	150,000
	Simptek Technologies	Smart meter energy control system for homes	150,000
	TotalPave	Mobile app for road surface roughness analysis	150,000
	Mycodev	Human grade chitosan production for wound sealants	100,000
	CyberPsyc	VR software for treating mental illness	50,000
	Spinzo	Dynamic pricing technology for online sales	50,000
	Food Tender	Food cost management platform for restaurant	50,000
	Timbre Cases	Humidity controlled guitar cases	40,000
	NBIF INVESTMENT		\$ 3,265,000
	LEVERAGED CAPITAL		13,200,000
	TOTAL IMPACT		\$ 16,465,000



There's a time and a place for everything.

Well, what would we do today without our tablets and smartphones? No matter our age, we can't help but find them wonderful, useful things, especially where families are concerned. They help us keep in touch, they teach our children (and grandparents) and keep them happy during long trips. They're changing the way kids play and spend their allowances.

Decades ago, kids asked for money to buy berry-shaped and flavoured candies. Today it's all about magic berries that do mystical things during a video game.

Itavio provides an app that allows parents to give their children a digital allowance for in-app purchases while limiting what they can see, and how long they can play on their device.

We help **new startups** take flight

In FY 2015-2016, NBIF's **Startup Investment Fund (SIF)** made six investments totaling \$600,000 to help create **six new startup companies**. Since all of our SIF investments are limited to \$100,000, our aim is to help prepare companies like *Itavio* and *Castaway Golf* for the larger venture capital rounds they need to scale their businesses. We do this by advancing their capability to raise capital through our due diligence and deal structuring processes.

Throughout the year, we helped our founders raise over **\$13 million in capital from other investors**. This moved several of our SIF companies to our Venture Capital Fund portfolio, including *Fiddlehead Technologies* (\$500,000) and *Qimple* (\$500,000).

Since NBIF is sometimes the first and only investor at this stage of a startup's life, the SIF fund ensures that innovative ideas that are "ahead of the curve" have a chance to succeed, despite their risk. Consider *Eigen Innovations*, one of our first \$100,000 SIF investments in 2014. Since then, they have



Melani Flannigan, CEO and Co-Founder, *Itavio*

raised **an additional \$1.4 million** in equity capital, and won third place in Cisco Systems' (**NASDAQ: CSCO**) Global Innovation Grand Challenge at the Internet Of Things World Forum in Dubai. Of the 3,000 entries from over 100 countries, *Eigen* was the **only Canadian company to make it to the final six**. The company received a \$25,000 cash prize plus business opportunities with the network solutions giant.

Six of the **16 startups** our SIF has created since 2014 have **moved** to our VC fund portfolio.

2015-2016	STARTUP INVESTMENT FUND		INVESTMENT
	NEW INVESTMENTS		
	COMPANY	PRODUCT	
	Force 3 Innovations	Ergonomic seat for commercial vehicles	\$ 100,000
	Full Pint Developments	Scheduling and monitoring software for restaurant industry	100,000
	Porpoise	Project management tool for corporate social responsibility	100,000
	Loft1	Editable whiteboard handwriting recognition software	100,000
	Ella	Clothing resale app	100,000
	Castaway Golf	Golfball retrieval and recycling company	100,000
	NBIF INVESTMENT		\$600,000
	SME CONTRIBUTION		\$ 1,100,000
	TOTAL IMPACT		\$ 1,700,000

**A little
energy can
help save
and make
money.**

RtTech Software's solutions allow large industrial plants to find, report and fix missed downtime and energy overuse in real time. During their startup phase, they saved one particular customer almost a million dollars in energy costs after finding components that were running when they didn't need to be. Today, their solution is installed in 80+ industrial plants in 21 countries on five continents. Now they're working on an Industrial Internet of Things infrastructure to connect equipment and plants across the globe.



Our VC portfolio is growing to new heights

Last year, NBIF made 24 investments totaling **\$3.9 million**. Of these, six were **new businesses** and 18 were **follow-on investments** to help our portfolio companies expand. Five of those moved from our Startup Investment to our Venture Capital Fund portfolios.



Keith Flynn, President and Founder, RtTech Software

NBIF PORTFOLIO OF COMPANIES ALL CAPITAL FUNDS

COMPANY	PRODUCT	INVESTMENT
RtTech Software	Real-time down time and energy use monitor	\$ 1,000,000
Inversa Systems	Diagnostic imaging tech for industry	1,000,000
Populus Global Solutions	National-level health information systems	750,000
Sentrant Security	Internet fraud detection and mitigation	625,000
Mycodev	Human grade chitosan production	600,000
KnowCharge	Electro-conductive paper products	525,000
Agora Mobile	Development tools for mobile apps	500,000
Encore Interactive	Live streaming technology for broadcasters	500,000
Gemba Software	Mobile customer service tech platform	500,000
Smartpods	Automated moving desk and health monitor	500,000
Smart Skin Technologies	Touch sensitive electronic fabrics for industry	500,000
Xiplinx	Production worker productivity monitoring	500,000
Eigen Innovations	Advanced optic sensors for manufacturing	500,000
Fiddlehead Technologies	Advanced cost prediction software	500,000
Qimple	Advanced online HR recruitment software	500,000
Food Tender	Online bidding for food service suppliers	300,000
Envenio	Computation fluid dynamics software	300,000
Foursum	Mobile app for golf scoring and sharing	250,000
Introhive	Internal contact matchmaking for sales leads	250,000
Resson Aerospace	Smart agricultural drones and software	250,000
SceneSharp Technologies	Colour image sharpening for orbital cameras	250,000
CyberPsync Software	Virtual reality software for treating phobias	250,000
HotSpot Merchant Solns	Parking payment app and marketing tools	250,000
Total Pave	Mobile app for road surface analysis	250,000
Geode Technologies	Mobile app for vehicle fleet tracking	200,000
Select Bidder	B2B online auction service	200,000
Castaway Golf	Underwater ball retrieval tech and resale	200,000
SimpTek Technologies	Smart meter energy control system for homes	200,000
Timbre Cases	Tough, humidity-controlled guitar cases	150,000
Spinzo	Dynamic pricing technology for online sales	150,000
ITAVIO	Parental control software for in-app purchases	100,000
ChemGreen Innovations	Anti-microbial plastics for healthcare	100,000
Loft1	Editable whiteboard technology	100,000
Ella	Online used clothing social media sales platform	100,000
Full Pint	Mobile app for food and beverage server mgt.	100,000
Porpoise	Corporate community service/charity tracking app	100,000
Force 3 Innovations	Data driven, remotely adjustable seat for drivers	100,000
Flixel Cinemagraph	Mobile and desktop pro cinemagraph tech	50,000
NB Biomatrix	Removing heavy metals from wastewater	50,000
Legacy Lane Fibre Mill	Micro fibre milling process and operation	25,000
TOTAL NBIF INVESTMENT		\$13,275,000

A healthy plant for a healthy industry.

Identified as a growth sector for the New Brunswick economy, growing medical marijuana as an industry is still in its infancy. Like any other plant crop, growers face numerous challenges when it comes to controlling fungus and pests, especially indoors.

To dispense medical marijuana, growers must ensure a particular quality and the absence of pesticides and fungicides that, when inhaled or ingested, could impact a patient's health—especially if their immune system is deficient.

Two of the most pervasive problems for growers are spider mites and white powder mold. Our 2016 Student Innovation Challenge winner, Noémi Pépin is using selective breeding practices to develop a disease-resistant plant.

The more energy the plant puts into the fighting of disease, the less it puts into the production of its active ingredient. As a result, the challenge is to protect the plant from disease while maintaining the THC concentration required by Health Canada.



We help our best **students** to become innovators

To continue New Brunswick's longstanding reputation for innovation, NBIF is committed to developing the natural resource that sustains it: people. In 2015-2016, the foundation granted **111 research assistantships** to college and university students, giving them valuable work experience in the province's research laboratories. Assistantships range from \$5,000 for undergraduates to \$10,000 for graduate students.

Further, to attract top students to the province and retain the ones already here, NBIF also awarded **188 scholarships** to students undertaking masters or doctoral studies. Scholarships range from \$7,000 for master's students to \$21,000 for Ph.D. candidates.

Our \$2.1M investment leveraged \$4.7M more for **our future** researchers.



NBIF's first R3 Student Innovation Challenge winning teams at R3 Gala. The competition was created to give students a realistic preview of what it is like to apply for and receive research funding. With a prize pot of \$30,000, split between four students, the aim was to give the students some of the money they need to work on an innovative project in the Summer of 2016. Some for pay, and the rest for the materials they need to do their research.



Noémi Pépin, first prizewinner of the R3 Student Innovation Challenge, is a biology student at the Université de Moncton who is selectively breeding the cannabis plant to make it more disease-resistant for growers.

2015-2016	STUDENT FUNDING BY INSTITUTION			
	INSTITUTION	SCHOLARSHIPS	ASSISTANTSHIPS	AMOUNT
	University of New Brunswick	120	54	\$ 1,290,000
	Université de Moncton	64	39	671,000
	Mount Allison University	4	9	84,000
	NBCC		2	10,000
	St. Thomas University		3	20,000
	R3 Student Innovation Challenge		4	30,000
	NBIF INVESTMENT			\$ 2,105,000
	LEVERAGED FUNDS			4,650,000
	TOTAL IMPACT			\$ 6,755,000

Giving a sweet disposition for arthritis sufferers.

Civilizations have been using the products of bees for medicinal purposes for centuries. With the advanced knowledge and technology of today, Dr. Luc Boudreau at the Université de Moncton has found a compound in propolis that can treat inflammatory diseases and rheumatoid arthritis in particular. Propolis is a material that bees excrete as a building material for their hives.

Dr. Boudreau has already demonstrated his ability to convert research into marketable intellectual property. He is a co-inventor on one patent that is currently being developed into a product for the detection of sterile inflammatory responses. He is also the co-founder of a start-up company, NaturoBee Ltd, looking to develop anti-inflammatory creams from compounds derived from propolis, a major component of bee hives.



We help innovators validate their ideas

There are four components to our Research Innovation Fund. **Emerging Projects**, which are at the ideation or proposal building stage; **Concept Validation**, for testing and prototyping ideas and research; **Capacity Development** for investments in the infrastructure and which technology researchers need to help get their research into the hands of industry, and; **Startup Grants** for new professors.

Below is a summary of awards granted for emerging projects and concept validation. For example, *Dr. Rodrigue Yossa* at the *Institute for Coastal Zone Research* in Shippagan received funding to study the feasibility of a larger commercial breeding program for raising Arctic Char in captivity.



Dr. Luc Boudreau, a new professor and founder of NaturoBee, received a startup grant for his lab. (See page 19.)

Dodick Gasser, a researcher at *CCNB Grand Falls*, received concept validation funding for evaluating the further research potential of water soluble natural-source fertilizers for the agricultural industry. Both emerging and concept validation projects often become much larger applied research projects in the future.

Our **\$230K** leveraged **\$360K** more to startup **new research** projects.

2015-2016	RESEARCH INNOVATION FUND BY TYPE AND INSTITUTION			
	RESEARCHER	ORG	TECH/EXPERTISE	INVESTMENT
	CONCEPT VALIDATION			
	Rodrigue Yossa	IRZC	Performance of Arctic Char in commercial breeding	\$ 20,250
	EMERGING PROJECTS			
	Douglas Campbell	MTA	Lichens as models for algal bioreactors	20,730
	Amanda Cockshutt	MTA	Validate high throughput immunodiagnostic assays	24,916
	François Chabot	CCNB	Determination of the cleanability of soiled golf balls	14,350
	Paul Cook	UNB	Auto dictionary construction for better language	25,000
	Khashayar Ghandi	MTA	Microwave assisted clean technologies	7,500
	Andrew Grant	MTA	Chemically modified cellulose for cleanup of water	23,995
	Dodick Gasser	CCNB	Evaluate water soluble natural-source fertilizers	17,400
	Zoe Finkel	MTA	Adaption of Phytoplankton to a changing climate	25,000
	Pier Morin Jr	UM	microRNAs as a pest management strategy	25,000
	Gordon L. Holloway	UNB	Pesticide transport in the atmosphere	10,000
	Yevgen Biletskiy	UNB	Ontology engineering for business rules interoperation	7,500
	Abdur Rahim	UNB	Integrated optimization modelling in quality control	8,000
	NBIF INVESTMENT			\$ 229,641
	LEVERAGED FUNDS			361,871
	TOTAL IMPACT			\$ 591,512

I can see clearly now the ground is gone.

Did you know that typically 60% of the oil found in a petroleum reservoir is not recovered? One method for extracting additional crude oil involves pumping fluids into the reservoir to force the oil out of the rock.

With his new MRI equipment, Dr. Bruce Balcom and co-workers at UNB observe the movement of oil inside a rock sample while pushing fluids through it for enhanced oil recovery. His methods can help oil companies determine the best and most economical extraction plan.

Dr. Balcom's research is being commercialized by NB-based Green Imaging, which provides software solutions that oil companies need to run and interpret MRI measurements in their own labs.



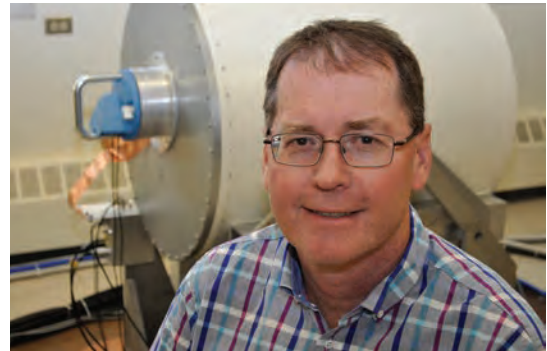
We help researchers stay on the critical edge of tech

Today, the state of the art of all technology is constantly changing. To keep pace with, and more importantly ahead of industry is critical for supporting the province's innovation-based economy.

In FY 2015-2016, NBIF invested **\$1.9 million** to help fund the equipment purchases and laboratory renovations that our applied researchers need to expand their innovation capacity.

For example, Dr. Petra Keinesberger's new in-vivo imaging system will allow her to track the performance of new molecular probes designed to pinpoint target diseased cells in the body.

Dr. Rémy Rochette also received funding to develop new tools for fishers that will lead to a more sustainable lobster industry in New Brunswick and beyond.



Dr. Bruce Balcom's new MRI equipment is helping NB companies develop new decision models.

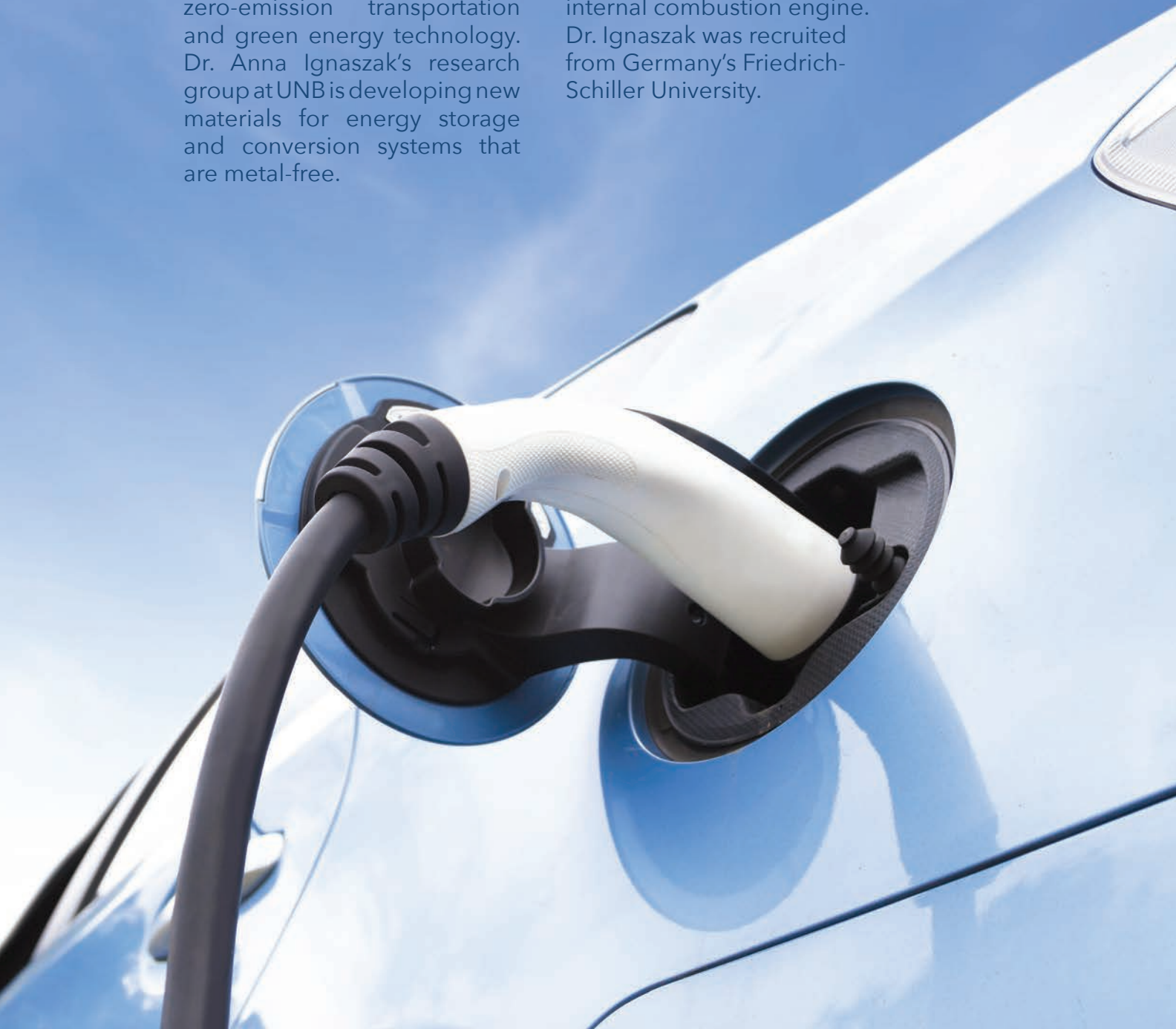
Our \$1.9M investment in **new infrastructure** leveraged \$5M more to get the job done.

RESEARCH INNOVATION FUND			
NEW INVESTMENTS IN INFRASTRUCTURE			
RESEARCHER	ORG	TECH/EXPERTISE	INVESTMENT
Bruce Balcom	UNB	MRI equipment for imaging fluids in porous media	\$ 253,422
Simon Lamarre	UM	Infrastructure for the study of protein metabolism control in fish	239,000
Rémy Rochette	UNB	Tools for sustainable lobster harvesting in Eastern Canada	178,503
Scott Pavey	UNB	Laboratory for aquatic molecular ecology and ecological genomics	150,000
Karen Kidd	UNB	Laboratory for assessing chemical contamination of food webs	150,000
Kenneth Kent	UNB	Advanced design leading to manufacturing in nano-tech	150,000
Chris McFarlane	UNB	Materials characterization using benchtop microEDXRF instruments	125,000
Irena Kaczmarek	MTA	Novel approaches in phytoplankton research	119,118
Karen Crosby	MTA	Patch clamp electrophysiology in the dorsomedial hypothalamus	82,339
E. Hébert-Chatelain	UM	Mitochondrial Src kinase as a therapeutic target in cancer	79,990
Ying-Hei Chui	UNB	New Brunswick Research Chair - Advanced Wood Product	75,000
Jocelyn Paré	ACRI	New Brunswick Research Chair - Medical Technologies	75,000
Petra Keinesberger	UNB	Vivo imaging system for tracking novel molecular probes in animals	72,774
David Joly	UM	Deciphering the molecular basis of organs in plant-microbe	72,000
Duane Barker	HMSC	New Brunswick Innovation Chair - Aquatic Biosciences	63,757
Deny Hamel	UM	Cascaded downconversion as a resource for quantum info process	53,876
NBIF INVESTMENT			\$ 1,939,779
LEVERAGED FUNDS			4,966,228
TOTAL IMPACT			\$ 6,906,007

Making it easier to be green.

Making batteries lighter, that store more energy and are environmentally friendly is set to define the next paradigm for zero-emission transportation and green energy technology. Dr. Anna Ignaszak's research group at UNB is developing new materials for energy storage and conversion systems that are metal-free.

When commercialized, Ignaszak's group's battery could provide an energy source that rivals, if not surpasses the internal combustion engine. Dr. Ignaszak was recruited from Germany's Friedrich-Schiller University.



We help **new professors** set up their **labs**

To conduct both the highest caliber of applied research and training, NBIF helps colleges and universities make competitive offers to exceptional research talent from around the world. Within the **Research Innovation Fund**, NBIF can provide new professors up to \$200,000 for the equipment, supplies or renovations they need to set up their labs.

In FY 2015-2016 NBIF awarded **\$580,000** in startup grants to help recruit seven new tenure-track professors to UNB and UdeM and an applied researcher at CCNB.

Dr. Scott Bateman received a startup grant of \$100,000 to set up his lab and help recruit him from UPEI. His expertise is in human-computer interfaces, most predominantly for human collaboration. For example, the industry has mastered multi-input collaboration for laptops. However, **more and more people are using smart devices**, which are not optimized for collaboration.

His new technology will allow people to point their camera at problems (i.e. your car engine) and allow someone on another smart device to point, circle, mark up what they are seeing. If you point the camera somewhere else, the markup disappears and when you turn back, reappears.



Dr. Anna Ignaszak was recruited from Friedrich-Schiller University in Germany. She also worked as a research associate at the Clean Energy Research Center (CERC) at The University of British Columbia and at the NRC Institute for Fuel Cell Innovation, both in Vancouver.

Since 2003, NBIF has helped **recruit over 60** new applied researchers.

2015-2016	TALENT RECRUITMENT FUNDING			INVESTMENT
	PROFESSORS & RESEARCH ASSOCIATES			
	RESEARCHER	ORG	TECH/EXPERTISE	
	Anna Ignaszak	UNB	Chemistry	\$ 120,000
	Scott Bateman	UNB	Computer Science	100,000
	Suprio Ray	UNB	Computer Science	75,000
	Gobinda Saha	UNB	Mechanical Engineering	75,000
	Luc Boudreau	UM	Bio-chemistry	75,000
	Nadler Simon	CCNB	Agronomy	75,000
	Herb Emery	UNB	Economics	60,000
	NBIF INVESTMENT			\$ 580,000
	LEVERAGED FUNDS			687,156
	TOTAL IMPACT			\$ 1,267,156

R3 Gala recognizes **results** of our top innovators

NBIF presented the 2016 **R3 Innovation Awards for Excellence in Applied Research** at its sixth R3 Gala. With an audience of 425, VP of Innovation at Coke, **David Butler**, explained how big corporations can pivot by co-creating new, agile companies with startups.

The first R3 recipient was UNB's **Dr. Liuchen Chang**, recognized for his wind and smart-grid innovations. His work integrates small industrial and **consumer power generators** into the main grid, networked into one large virtual power plant.

The second recipient was Huntsman Marine's **Dr. Amber Garber** for her selective breeding program and technology for commercial salmon farmers. Her method aims to produce non-related breeding partners that are naturally **resistant to sea lice and bacterial kidney disease**, saving the industry millions in treatments and lost livestock.

The third recipient was CCNB Bathurst's **Alain Doucet**, who led the research and development of dozens of innovations for industry, and most notably for engineering company Leading Edge Geomatics. For Leading Edge, he and his team developed a plug and play device, approved by Transport Canada, that allows the company to **install any number of imaging systems into a single aircraft**. Prior to that, the company required a separate aircraft for each imaging system.

