



THE PRINCE EDWARD ISLAND BIOSCIENCE CLUSTER



BIOACTIVES FOR HEALTH

- A unique and successful collaborative environment (business-research-government)
- Human health: Natural health products, including cosmetic ingredients, nutraceuticals, functional foods, active pharmaceutical ingredients, and product prototyping
- Animal Health and Nutrition Products
- Fish Health Products for Global Aquaculture
- Human and Animal Health Diagnostics
- Home of Emergence: Virtual bioscience business incubator

RESEARCH PARTNERS

National Research Council Canada
University of Prince Edward Island
Atlantic Veterinary College
Holland College/Canada's Smartest Kitchen
Agriculture & Agri-Food Canada
Bio Food Tech

GOVERNMENT PARTNERS

Atlantic Canada Opportunities Agency
Innovation PEI
National Research Council Industrial Research Assistance Program
Foreign Affairs and Trade Development Canada
Agriculture & Agri-Food Canada
Industry Canada

health from land and sea

PRINCE EDWARD ISLAND
 **BioAlliance**

www.pebioalliance.com

PRINCE EDWARD ISLAND'S BIOSCIENCE CLUSTER

The Prince Edward Island Bioscience Cluster is the location of choice for companies engaged in the research, development, and commercialization of bioactive-based human, animal, and fish health and nutrition products. Since 2005, the PEI Bioscience Cluster has more than tripled in size, with remarkable growth in business revenues, employment, and a marked increase in private and public sector investments in our companies.

TECHNOLOGY FOCUS

- 🌀 Center for Research and Product Development: Bioactive Compounds derived from Natural Sources, Terrestrial and Marine
- 🌀 Human Health: Natural health products, cosmetic ingredients, nutraceuticals, and active pharmaceutical ingredients
- 🌀 Animal Health and Nutrition Products
- 🌀 Fish Health Products for Global Aquaculture
- 🌀 Human and Animal Health Diagnostics

OUR VALUE PROPOSITION

- 🌀 Home to "EmerGence" – Canada's Bioscience Business Incubator
- 🌀 Relevant and accessible science and technology
- 🌀 Customized financial assistance
- 🌀 Ready access to key decision makers
- 🌀 Collaborative business and research environment
- 🌀 Faster to market

PEI CLUSTER METRICS

- 🌀 Over 40 companies
- 🌀 Private sector revenues over \$150 million/year
- 🌀 Over 1,380 employees in sector
- 🌀 Over \$65 million annual investment in R & D (2012 Stats Can)
- 🌀 Over \$22 million in new follow on investment (2012)

KEY SCIENCE AND TECHNOLOGY INFRASTRUCTURE

- 🌀 National Research Council Canada
- 🌀 Agriculture and AgriFood Canada
- 🌀 University of Prince Edward Island
- 🌀 Atlantic Veterinary College
- 🌀 BIOFOODTECH
- 🌀 Holland College Canada's Smartest Kitchen
- 🌀 BioCommons Light Manufacturing Facility

PRINCE EDWARD ISLAND PRIVATE-SECTOR COMPANIES

Aqua Bounty Canada Inc.: Provides technology to reduce commercially-farmed salmon and trout harvests by half; conducts R&D on anti-infectives therapeutics for shrimp and finfish and develops strategies to improve shrimp genetics.

ARK BioMedical Canada Corp.: Manufactures and sells medical technology around the world! ARK BIO manufactures microwave plasma defrosters for FFP.

Atlantech BioEnergy Corporation: Construction of a 300,000 litre per year demonstration ethanol biorefinery facility to process locally grown energy crops as feedstock to produce renewable ethanol fuel. Following successful implementation of the demonstration facility, ABC will develop a full-scale ethanol refinery within Canada to advance R&D initiatives relative to future bioenergy developments.

Atlantech® Companies: Professional team of engineers, biologists and manufacturers dedicated to supplying top quality engineering, design and project management services, specifically tailored to meet the unique demands of the aquaculture, fish and food processing industries. Atlantech designs and manufactures water recirculation and effluent treatment systems.

Avivagen Animal Health: Develops carotenoid compounds, commonly-known as beta-carotene and lycopene, which have oxidation benefits for non-pharmaceutical use and cancer treatment applications.

BioSpa: BioSpa (Quann) Cosmeceuticals Inc. manufactures and distributes the novel professional skincare line - Quannessence Skincare, based on botanical technologies and PEI based extracts that improve skin conditions and assist in reducing the effects of aging.

BioVectra Inc.: Provides small to large-scale cGMP Custom Manufacturing of API's from fermentation, natural extraction, and synthesis, along with a complement of MPEG and protein processing reagents targeted toward bioprocessing at its several FDA-inspected facilities in Prince Edward Island.

Cana-add Inc.: Cana-add Inc. is a feed additive company that provides solutions to select commercial poultry and cattle markets. Cana-add is committed to supporting the animal feed market with the highest quality nutrition products that ensure growth enhancement, maximized production, maximized food utilization and a selective protection against pathogens which will aid in maximizing profit for its clients.

Canada's Island Garden: Canada's Island Garden is a pre-licence medical marijuana production, processing and distribution company located in the BioCommons Research Park, Charlottetown, PEI. The completed facility is comprised of 24,000 square feet with two floors dedicated to growing and processing medical marijuana.

Centre for Aquaculture Technologies Canada: A contract research organization (CRO) providing support for R&D and commercialization activities in the aquaculture industry, with particular expertise in GxP-compliant research.

CNS-CRO: A private pre-clinical neurological disease speciality laboratory. CNS-CRO offers a range of proprietary cell-based and animal models for pre-clinical evaluation of test compounds for neurodegenerative disease. They also have extensive expertise in behavioural and cognitive assessment.

CRP40 Inc.: A biotechnology company focused on the research and development of a novel diagnostic blood test for the early and definitive detection of neurological disorders, such as Parkinson's disease, and a proprietary therapeutic to treat and mitigate the effects of neurological diseases. Building upon the foundational research of a patented natural protein, CRP40 Inc. is seeking co-development and commercialization partners for synergistic collaboration.

Delivra Inc.: A privately owned company headed by Dr. Joseph Gabriele, inventor of Delivra™ – a proprietary transdermal compound base that can be used as a natural, organic replacement for traditional synthetic creams to deliver medications when applied to the skin. Delivra™ is the base compound in LivRelief™ and LivSport™ products – natural, no-side-effect topical pain relief and sports performance creams with proven pharmacological efficacy, which are produced and distributed by Delivra Inc.

Diversified Metal Engineering (DME): Conducts custom design and fabrication of equipment for brewing, biotech, bioenergy, industrial food and beverage, water treatment, and marine applications. Their manufacturing facility has 20,000 sq. ft. of production area, with the latest technology applied throughout engineering operations and fabrications. Integrated process systems are designed, fabricated, pre-piped, wired and tested on-site.

Elanco: Elanco is a world leader in developing products and services that enhance animal health, wellness and performance. Elanco's portfolio includes nearly 300 brands encompassing therapeutics, vaccines, parasiticides, antimicrobials, surgical, enzymes, food safety and more. The company has a half-century of innovative products, services and operates from its global headquarters in Greenfield, Indiana, and employs over 2,500 people in more than 40 countries. Elanco is a division of Eli Lilly and Company.

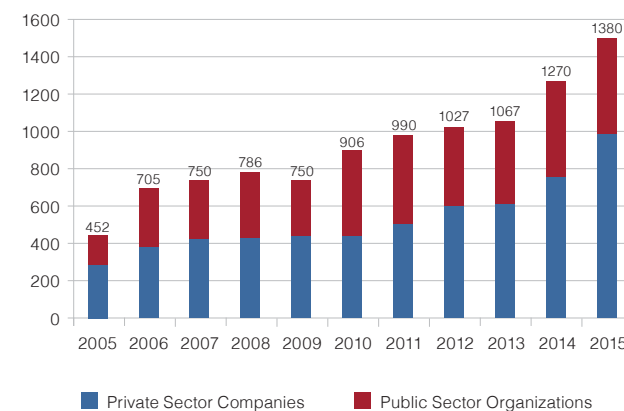
GRW Laboratories Inc.: GRW Laboratories is a pharmaceutical research organization specializing in the PEGylation of small molecules for medicinal development. GRW is developing proprietary small molecule drugs and also works with pharmaceutical organizations to develop second generation small molecule drugs with improved pharmacokinetics.

Halibut PEI: Creates innovative and sustainable processes and systems for the aquaculture industry – building a halibut aquaculture industry on land in Prince Edward Island by accessing the saltwater resource under the Island through wells. The company produces fresh, delicious fish with exceptional growth rates, free of antibiotics and a low environmental footprint.

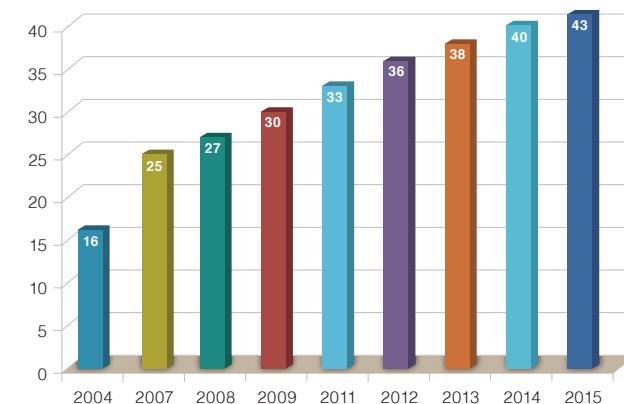
HZPC Canada: A specialist in breeding, growing and marketing of seed potatoes. HZPC has undertaken an extensive program of variety trialing and introduction in most potato production regions of North America. Once the viability of the potato variety is established, HZPC begins in-vitro plant propagation which forms the basis for seed potatoes grown by the best Canadian producers.

Island Abbey Foods Ltd.: An Island-based company that produces 100% pure honey-based products, such as the Honey Drop Lozenges and Honey Delight candy, Pure Honey Sprinkles and honey suckers. The Honey Drop is the world's first pure, non-sticky honey that you can hold.

PEI BIOCLUSTER DEVELOPMENT
TARGET EMPLOYMENT



PEI BIOCLUSTER COMPANY GROWTH



Island Water Technologies: Creators of the world's first self-powered wastewater treatment system designed to operate off the grid. Through combined cutting-edge biotechnology, electrical engineering, and precision manufacturing, its modular system, energy-independent REGEN™ system redefines cost-effective, decentralized wastewater treatment.

Libramen Naturals: Libramen Naturals is an innovative start-up company in Canada specializing in the research and development of various traditional Chinese herbal and other natural medicines to treat spinal cord injury and disease.

Murphy Laboratories: Specializes in innovative health care solutions through custom compounding and product research and development. Areas of focus include pharmaceuticals, natural health products, cosmetics, and animal health.

Nature's Crops International: A premier supplier of organic, non-GM, and expeller pressed oils. They manage the supply chain of high value non-commodity products derived from specialty grown crops for a range of industries, including functional food, pharmaceutical, cosmetic and specialty channels.

Nautilus Biosciences Canada Inc.: Develops production methods and new drug leads derived from marine organisms.

Neurodyn Inc.: Neurodyn's portfolio approach to identifying, validating and developing bioactives for the treatment of neurological diseases utilizes the company's BioActives Discovery EngineT, which combines partners with demonstrated knowledge of natural compounds, with Neurodyn's in-house medicinal chemistry capability and proprietary animal models of neurological disease.

NeuroQuest Inc.: A drug development company focused on modulation of nerve transmission and clinical applications for neuropathic pain, through a first-in-class small molecule drug discovery platform, based on bioactives discovered in plant extracts showing efficacy for neuropathic pain.

OmniActive Health Technologies Canada: OmniActives™ supplies nutritional ingredients to healthcare, food and personal care industries.

Origins Xtractions Ltd. (OXL): OXL was formed in 2012 to meet the demand for High Pressure Supercritical Fluid Extraction (SFE) services. Plans are for a SFE facility to be built on Prince Edward Island to enable the extraction of products from biological materials, agricultural and aquatic species, and microbes including, carrots, bacteria, algae, etc.

Phytocultures: Transfers and adapts plant tissue culture technology, phytokit systems and in vitro plant propagation.

Regis Duffy Bioscience Fund: A \$1 Million fund created to invest in Bioscience related activities in PEI. The fund assists emerging science based businesses that are at the commercialization or near commercialization stage of their development to receive up to \$100,000 in equity.

Sekisui Diagnostics P.E.I.: Sekisui Diagnostics P.E.I. Inc. is a leading manufacturer and developer of in-vitro diagnostics products, focused on bringing general and specialty clinical chemistry reagents to diagnostics manufacturers and clinical laboratories worldwide.

Sevita International Inc.: A non-GMO soybean research, breeding and seed company focused on specialty food-grade seed varieties, offering DH™ premium Certified soybean and natto seed varieties used to meet the needs of specialty soy food and beverage markets.

Solarvest: Solarvest is committed to the organic production of high value marine (DHA and EPA) Omega-3 fatty acid health products. Solarvest's intellectual property for these products encompasses the use of all fruit, vegetables and their derivatives resulting in chemical free production of these essential health products.

Somru BioSciences: An emerging biotechnology company dedicated to developing breakthrough antibody technology for research, diagnostic and therapeutic applications. The company currently uses antibodies to generate reagents that will accelerate biosimilar research and development.

Timeless Veterinary Systems Inc.: Creates specialized, innovative web-based technologies for veterinarians. The company released its Timeless Vet Drug Index™ for Android devices in February 2014 – evidence-based drug formulary app designed to give practicing clinicians a convenient, high quality drug resource containing only the most relevant drug information with full link-outs to PubMed abstracts and a visual evidence-based ranking system to evaluate the strength of the evidence.

Virotechnologies: Vaccines for finfish. Provides virology technology services and conducts molecular virology R&D.

ViTRAK Systems Inc.: A federally incorporated R&D company dedicated to the development and commercialization of its two patents in the field of movement tracking and analysis, including a pressure sensitive flooring system with sophisticated footprint analytic software for gait research and analysis, called Stepscan™. ViTRAK is also pursuing the development of its patented prototype monitoring system for patients with Alzheimer's and other forms of dementia.