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CARTE DE L'EXPERTISE EN RECHERCHE DANS L'INDUSTRIE DU HOMARD



Canada



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BASE DE DONNÉES AFRED

(BASE DE DONNÉES SUR LES INSTALLATIONS ET L'ÉQUIPEMENT DE RECHERCHE DE LA RÉGION DE L'ATLANTIQUE)



Écosystème de recherche sur le homard

Durant les consultations avec les industries du secteur de l'alimentation qui ont débuté à l'automne 2018, les commentaires initiaux que l'APECA a reçus laissent entendre que peu de recherches étaient effectuées pour appuyer ce secteur, et l'on constatait un dédoublement inutile.

Par conséquent, l'APECA s'est associée à Springboard Atlantic pour déterminer la capacité et recenser les travaux en cours menés par des chercheurs universitaires.

Ce répertoire du savoir-faire en matière de recherche sur le homard découle directement de ces travaux et comprend les points clés suivants :

- Beaucoup de travaux sont en cours, comme le montre le répertoire.
- Il y a peu d'indices de dédoublement ou de travaux non pertinents dans les recherches actuelles.
- Parallèlement, compte tenu de l'importance du secteur, le soutien à la recherche pour l'industrie est limité, et l'on remarque des lacunes au chapitre des connaissances fondamentales en ce qui concerne le comportement, la physiologie et la population. On a également davantage besoin de recherches pour appuyer l'innovation et la compétitivité, et ce, par les technologies et la valorisation. En effet, ces travaux sont nécessaires pour soutenir l'industrie et accroître sa valeur globale.

Au-delà du répertoire du savoir-faire en matière de recherche sur le homard, l'APECA et Springboard ont aussi souligné que les gouvernements fédéral et provinciaux, les associations de pêcheurs de homard et diverses entreprises mènent également des recherches substantielles sur le homard, tel que décrit ci-dessous.

Environnement de recherche pour le homard

Le **gouvernement fédéral** dirige les travaux portant sur la science du homard par l'intermédiaire du ministère des Pêches et des Océans (MPO). Des scientifiques fédéraux participent activement aux activités scientifiques pour mieux comprendre la dynamique des populations et la façon dont l'environnement changeant peut influencer ou influencer réellement sur les pêches. Des scientifiques d'autres organismes fédéraux comme le Conseil de recherches en sciences naturelles et en génie ou Environnement et Changement climatique Canada mènent aussi des travaux liés directement ou indirectement au homard. Les recherches scientifiques du MPO sont souvent menées en partenariat avec les gouvernements provinciaux, l'industrie et les chercheurs universitaires. Par exemple, il y a plusieurs projets de collecte de données à long terme avec des associations de pêcheurs qui ont été menés en partenariat avec les scientifiques du MPO et les associations.

Les **gouvernements provinciaux** du Canada atlantique ont leurs propres scientifiques spécialisés dans les pêches qui collaborent avec l'industrie et mènent les recherches. La majeure partie des recherches provinciales, particulièrement en Nouvelle-Écosse et à l'Île-du-Prince-Édouard, se concentrent sur la qualité du homard dans l'ensemble de la chaîne de valeur. Les gouvernements provinciaux ont également soutenu des projets avec des entreprises et des associations de pêcheurs.

De nombreuses **associations de pêcheurs de homard** de la région participent depuis longtemps, **individuellement ou par l'entremise du Lobster Node**, à la recherche tant de façon indépendante qu'en partenariat. Par le passé, le savoir-faire pratique des pêcheurs a parfois été ignoré lorsqu'on se penchait sur la *recherche* et les *experts*. En cette ère de changements importants, ce savoir-faire pratique est maintenant reconnu comme étant essentiel, car ces personnes perçoivent les changements et y réagissent en temps réel.

Des **entreprises** mènent aussi des recherches. Naturellement, une grande partie des travaux est exclusive et axée sur des besoins précis. De vastes efforts ont été consacrés à la manutention et à l'entreposage, ainsi qu'à l'automatisation et à l'intégration des technologies de pointe.

Collaboration

Bien qu'il existe une capacité et du savoir-faire, il y a eu par le passé beaucoup de fragmentation dans le secteur. Grâce aux travaux du Lobster Node original, du Conseil canadien du homard, de diverses associations de transformateurs et de pêcheurs et du gouvernement, on constate maintenant un esprit de collaboration nettement amélioré dans l'industrie.

Néanmoins, compte tenu de la vitesse potentielle du changement découlant du climat et de la nécessité de résoudre les problèmes touchant toute l'industrie, notamment la main-d'œuvre, la traçabilité et l'automatisation, la collaboration est requise plus que jamais.

Lobster Research / Service Expertise prepared by Springboard Atlantic Inc. and Atlantic Canada Opportunities Agency

Recherche sur le homard / Expertise de service préparée par Springboard Atlantic et l'Agence de promotion économique du Canada atlantique

Province: New Brunswick Nouveau-Brunswick

Collège communautaire du Nouveau-Brunswick (CCNB)				
Contact: Alain Doucet (Industrial Liaison Officer): 506-547-2190 email: alain.doucet@gnb.ca				
Professor/Instructor/Technician - Professeur/Instructeur/Technicien	Department	Field(s) of Research / Service provided/ Service to be provided - Domaine(s) de recherche / Service fourni / Service à fournir	Relevant work to Lobster industry/Project on-going with the lobster industry/ past projects - Travaux pertinents pour l'industrie du homard / Projet en cours avec l'industrie du homard / Projets antérieurs	Links / Liens
Raphael Roy	Advanced Manufacturing & Welding	Electrical Engineering & Automation / Génie électrique et automatisation	Automation & Process management / Automatisation et gestion des processus	https://ccnb.ca/entrepreneurship-et-innovation/research-and-industrial-services/centres-and-specialized-services/mittc.aspx
Reno Albert	Advanced Manufacturing & Welding	Mechanical Engineering & Process / Génie mécanique et processus	Shrimp & Bycatch separator / Séparateur de crevettes et prises accessoires	
Youssef Boulahsen	Advanced Manufacturing & Welding	Instrumentation Technology / Technologie d'instrumentation	Automation / Automatisation	
André Vienneau	Advanced Manufacturing & Welding	Aquaculture & Tool & Dye / Aquaculture & outil & colorant	Oyster Washing Machine / Machine à laver pour les huîtres	
Patrick Hachey	Advanced Manufacturing & Welding	Tool & Dye & CNC machining / Outil & colorant & usage CNC	Oyster Bag Washing Machine / Machine à laver pour les sacs à huîtres	
Laurie Duguay	Advanced Manufacturing & Welding	Tool & Dye & Fabrication / Outil & colorant & Fabrication	Tooling development / Développement d'outillage	
Frank Feng	Advanced Manufacturing & Welding	Mechanical Engineering & Welding / Fabrication avancée & soudage	Advance welding methods / Méthodes de soudage avancées	
Satya Gajapathi	Advanced Manufacturing & Welding	Mechanical Engineering & Welding / Fabrication avancée & soudage	Advance Welding methods / Méthodes de soudage avancées	

Roderigue McGrath	Advanced Manufacturing & Welding	Fabrication	Advance manufacturing methods / Méthodes de fabrication avancées
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New Brunswick Community College (NBCC)			
Contact	Joni Leger (Applied Research Development Officer): (506) 869-6767 joni.leger@nbcc.ca		Scott Henwood (Applied Research Development Officer): (506) 453-2101 Scott.Henwood@nbcc.ca

Professor/Instructor/Technician	Department	Field(s) of Research / Service provided/ Service to be provided	Relevant work to Lobster industry/Project on-going with the lobster industry/ past projects	Links
Darren Dorcas Dave Irvin	Culinary Arts	Value Added Food / Recipe Development	Partnered with Longshore Fisheries, a lobster & seafood processing facility, to develop new products from ingredients that previously had gone to waste	http://nbcc.ca/applied-research/research-projects/value-added-food-product-development

St. Thomas University (STU)				
Contact: Lauren Eagle ph: (506) 452-0621 email: research@stu.ca				

Professor/Instructor/Technician	Department	Field(s) of Research / Service provided/ Service to be provided	Relevant work to Lobster industry/Project on-going with the lobster industry/ past projects	Links
Dr. Susan Machum	Sociology	Rural Issues: social justice, sustainability, agriculture, economics, Conservation Council of NB, value of locally produced goods, production-consumption cycle	Grass-root initiatives promoting sustainability & socially-just economic practices; established partnerships with community leaders & activists. 5-year CRC on instilling public confidence in the value of local food production, ensuring women's contributions to rural life are recognized & fostering interest in rural-urban collaboration. Studied how underlying social processes & food agricultural policies & practices affect rural NB. Studies how local populations have responded to global economic & political processes, how agricultural policy helps/hinders family farming, examine the roots of current agricultural policy directions, study rural activism.	

Université de Moncton (UdeM)

Contact

Valérie Bonnardel-Vacqué, Directrice - Bureau de Soutien à l'Innovation: (506) 858-4454 valerie.bonnardel@umoncton.ca

Pauline Roy Directrice - Centre Assomption de recherche et de développement en entrepreneuriat (CARDE) (506) 874.6767 pauline.roy@umoncton.ca

Professor/Instructor/Technician - Professeur/Instructeur/Technicien	Department	Field(s) of Research / Service provided/ Service to be provided - Domaine(s) de recherche / Service fourni / Service à fournir	Relevant work to Lobster industry/Project on-going with the lobster industry/ past projects - Travaux pertinents pour l'industrie du homard / Projet en cours avec l'industrie du homard / Projets antérieurs	Links / Liens
Chiasson, Alyre G.	Biologie / Biology			http://professeur.umoncton.ca/umcm-chiasson_alyre/
Lamarre, Simon	Biologie / Biology		collabore presentement dans une recherche sur le crabe / is currently collaborating in crab research	http://professeur.umoncton.ca/umcm-lamarre_simon/
Miron, Gilles	Biologie / Biology			http://professeur.umoncton.ca/umcm-miron_gilles/
Surette, Céline	Chimie et biochimie / Chemistry & Biochemistry			http://professeure.umoncton.ca/umcm-surette_celine/
Yassine Bouslimani	Génie électrique / Engineering	l'automatisation de processus pour des usines de transformation des produits de la mer / process automation for seafood processing plants	la robotique, l'automatisation, la vision, le contrôle, l'intelligence artificielle des usine a travers l'expertise en électronique et systèmes intelligents / robotics, automation, vision, control, artificial intelligence of factories through expertise in electronics and intelligent systems	https://www.umoncton.ca/umcm-ingenierie-electrique/
Mohsen Ghribi	Génie électrique / Engineering	l'automatisation de processus pour des usines de transformation des produits de la mer / process automation for seafood processing plants	la robotique, l'automatisation, la vision, le contrôle, l'intelligence artificielle des usine a travers l'expertise en électronique et systèmes intelligents / robotics, automation, vision, control, artificial intelligence of factories through expertise in electronics and intelligent systems	http://professeur.umoncton.ca/umcm-ghribi_mohsen/
Élise Mayrand	Biologie / Biology	Invertébrés marins; Réponses physiologiques à des stress d'origine anthropique et naturelle, dans le contexte de l'aquaculture des bivalves; Alimentation des bivalves; Physiologie hivernale; Développement durable /		http://professeure.umoncton.ca/umcs-mayrand_elise/

Surette, Marc	Chimie et biochimie / Chemistry & Biochemistry			
IRZC / Valorès	partenaire avec UdeM / Paartner with UdeM	Multidisciplinary approach, research focused on aquaculture, fishery & marine byproducts, peat and peatlands. 4th research area relating to sustainable development of coastal zones underway. These research areas are supported by laboratory analysis & environmental services / Marine invertebrates; Physiological responses to stresses of anthropogenic and natural origin, in the context of bivalve aquaculture; Feeding of the bivalves; Winter physiology; Sustainable development		http://www.irzc.umcs.ca/

University of New Brunswick				
Contact: Matt Douglass (Knowledge Transfer Officer) 506-292-1135 m.douglass@unb.ca				
Professor/Instructor/Technician	Department	to be provided	with the lobster industry/ past projects	Links
Remy Rochette	Biological Sciences (UNBSJ)	Ecology, Micro-Evolution and Conservation of Coastal Marine Invertebrates	Extensive lobster research experience	http://www.unb.ca/saintjohn/ase/research/rochettelab/index.html
Ian Church	Geodesy and Geomatics	Ocean Mapping	GIS ocean seabed mapping, particularly Canadian arctic. One of his current primary research interests are in integrating hydrodynamic numerical modelling with marine habitat mapping, among other areas.	http://www.omg.unb.ca/
Herb Emery	Economics	Researches the development of the Canadian economy and the persistence of long-standing regional disparities.	Aside from understanding the economic fundamentals of growth in a small open economy, his work incorporates political, historical, cultural and other institutional factors that have shaped Canadian development processes. Will be approached to provide economic research on fishermen	http://www.unb.ca/faculty-staff/directory/arts-fr-economics/emery-herb.html

Melanie Wiber	Anthropology	Forms of property rights in dairy and fishing quota, in genetics, and in cultural property, as well as community-based management and local ecological knowledge in the fisheries	Extensive background with DFO, Oceans Management Research Network, Coastal Community and University Research Alliance	http://www.unb.ca/fredericton/arts/departments/anthropology/people/wiber.html
Rickey Dubay	Mechanical Engineering	Advanced Process Control; Plastic Injection Molding	Potential collaboration opportunities with procession plants based on previous engagements	http://www.unb.ca/faculty-staff/directory/engineering-mechanical/dubay-rickey.html
Scott Bateman	Computer Science	Human Computer Interaction	Research areas are motivated by designing and building technology that works best for people. Potential to be applied to fishing vessels	https://www.cs.unb.ca/people/scottb
Mohsen Mohammadi	Mechanical Engineering	Additive Manufacturing	Marine Additive Manufacturing Centre of Excellence, potential to create and design manufacturing components (cages, vessels, etc.)	http://www.unb.ca/faculty-staff/directory/engineering-mechanical/mohammadi-mohsen.html
Audrey Limoges	Earth Sciences	Researches the impact of natural environmental and anthropogenic changes on aquatic systems.	Uses microfossils and geochemical tracers preserved in sediments to reconstruct changes in climatic, environmental and oceanographic conditions on time scales spanning decades to millennial that could be used to evaluate lobster habitat.	http://www.unb.ca/fredericton/science/depts/earth-sciences/people/audreylimoges.html
Suprio Ray	Computer Science	IoT and Big Data management, cloud computing.	These research areas are applicable to fishing vessels	http://www.cs.unb.ca/~sray/
Brian Hayden	Biology	Satble Isotope Research		
Audrey Limoges	Environmental	Sedimentary analysis		
Yonghao Ni	Chemical Engineering	Pulp and Paper Packaging		
Yuri Yevdokimov	Economics	Regional Climate Change Economics		
John Bird	Law	Maritime and Environmental Law		
Cassidy D'Aloia	Marine Biology	Ecology		
Hsin-Chen Lin	Business	International Marketing		
Barry Watson	Business/Economics	Economics security and wellbeing		

Homarus Inc.

Contact: Dounia Daoud, PhD Scientific Researcher ph: 1 (506) 532-2485 email: dounia@mfu-upm.com website: <http://www.homarus.org/>

Homarus Inc. is a non-profit research and development organization created by the Maritime Fishermen 's Union (MFU) in 2001 whose mission is to develop tools to ensure the sustainability of the lobster resource and its fishery. Objectives: / Homarus Inc. est un organisme de recherche et développement à but non lucratif créé par l'Union des pêcheurs des Maritimes (UPM) en 2001 dont la mission est de développer des outils pour assurer la durabilité de la ressource de homard et de sa pêche. Objectifs :

Develop practical and effective approaches for conserving marine ecosystem health / Élaborer des approches pratiques et efficaces pour conserver la santé de l'écosystème marin

Develop practical and effective approaches for enhancing fishermen economic viability / Développer des approches pratiques et efficaces pour améliorer la viabilité économique des pêcheurs

Increase scientific knowledge surrounding lobster biology and its habitat / Accroître les connaissances scientifiques sur la biologie du homard et son habitat

Develop educational tools for raising awareness amongst stakeholders concerning the importance of conserving marine ecosystem health / Développer des outils pédagogiques pour sensibiliser les parties prenantes à l'importance de conserver la santé de l'écosystème marin

Huntsman Marine Science Centre

Contact: ph: (506) 529-1200 website: <http://www.huntsmanmarine.ca/research-applied-science-services/>

The Huntsman Marine Science Centre is engaged in a broad range of marine science and applied research initiatives. Our efforts are focused on everything from marine biology to bird banding. We also have facilities that are research ready and capable of supporting a wide variety of research projects / Services de recherche et de sciences appliquées

Le Huntsman Marine Science Centre participe à un large éventail d'initiatives en sciences marines et en recherche appliquée. Nos efforts sont concentrés sur tout, de la biologie marine au baguage des oiseaux. Nous disposons également d'installations prêtes pour la recherche et capables de soutenir une grande variété de projets de recherche.

Lobster Research / Service Expertise prepared by Springboard Atlantic Inc. and Atlantic Canada Opportunities Agency

Province: Newfoundland & Labrador

College of the North Atlantic				
Contact: Wayne Quilty (Director - Partnerships, Entrepreneurship and Community Engagement) (709) 643-7782				
Professor/Instructor/Technician	Department	Field(s) of Research / Service provided/ Service to be provided	Relevant work to Lobster industry/Project on-going with the lobster industry/ past projects	Links
Paul Hearn	Engineering	Advanced Automation/Robotics for the Fish Processing Industry; Machine Design; Machine Vision Systems Design; Vision Guided Robot System Design; 3D Design and Modeling; 3D Printing Prototyping	Automated Snowcrab Robotic Workcell	https://www.youtube.com/watch?v=TNXkGOvdqAs https://www.linkedin.com/in/paul-hearn-p-eng-48880a3a/

Memorial University & Marine Institute				
Contact: Matthew Grimes (Technology Commercialization Officer) (709) 864-3048 mtgrimes@mun.ca				
Professor/Instructor/Technician	Department	Field(s) of Research / Service provided/ Service to be provided	Relevant work to Lobster industry/Project on-going with the lobster industry/ past projects	Links
Dr. Baiyu (Helen) Zhang	Engineering (chair in Coastal Environment)	Bio-based solutions for coastal pollution	Waste water treatment	https://www.mun.ca/research/explore/chairs/zhang.php
Dr. Barbara Neis	Sociology	Occupational Health and Safety, Local Ecological Knowledge and Science, Political economy,	Lobster fishery sustainability	https://mun.yaffle.ca/projects/1152 and https://www.mun.ca/soc/people/faculty-profiles/barbara-neis.php
Dr. Bing Chen	Engineering	Marine and coastal pollution mitigation	Waste water treatment	https://www.mun.ca/engineering/about/people/bingchen.php
Dr. David Schneider	Ocean Sciences	Environmental Biology	Conservation (lobster egg production)	https://mun.yaffle.ca/projects/1807
Dr. Paul Snelgrove	Ocean Sciences	ecology/disturbance and anthropogenic impactsconservation (larval lobster)		https://mun.yaffle.ca/projects/1799 and https://www.mun.ca/osc/psnelgrove/

Dr. Penny Morrill	Earth Sciences	Hydrocarbon Remediation/phytoremediation	Remediation	https://www.mun.ca/earthsciences/Our_People/Faculty/Faculty_Pages/Morrill.php
Dr. Robert G Hooper	Biology	Lobsters and Fishers in Bonne Bay	Conservation (tagg & release/commercial harvest)	https://mun.yaffle.ca/projects/1121
Dr. Arnault Le Bris	Centre for Fisheries Ecosystems Research	Aquatic habitat restoration		https://www.mi.mun.ca/departments/centreforfisheriesecosystemsresearch/ourteam/directorsandscientists/
Dr. Deepaka Dave	Centre for Aquaculture and Seafood Development	Bi-product utilization		https://www.mi.mun.ca/departments/centreforaquacultureandseafooddevelopment/ourteam/researchtechnicalpersonnelmarinebioprocessing/
Dr. Sherrylynn Rowe	Centre for Fisheries Ecosystems Research	Stock Assesement	Works with lobster folks right now	https://www.mi.mun.ca/departments/centreforfisheriesecosystemsresearch/ourteam/directorsandscientists/
Steve King (P.Eng)	Centre for Aquaculture and Seafood Development	Shell fish processing and automation		https://www.mi.mun.ca/departments/centreforaquacultureandseafooddevelopment/ourteam/researchtechnicalpersonnelseafoodprocessing/
	Centre for Sustainable Aquatic Resources	Fish Capture, Gear Design and Testing		https://www.mi.mun.ca/departments/centreforsustainableaquaticresources/

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Recherche sur le homard / Expertise de service préparée par Springboard Atlantic et l'Agence de promotion économique du Canada atlantique

Province: Nova Scotia Nouvelle-Écosse

Acadia University				
Contact: Leigh Huestis (Director, Office of Industry & Community Engagement) 902-585-1425 leigh.huestis@acadiau.ca				
Professor/Instructor/Technician	Department	Field(s) of Research / Service provided/ Service to be provided	Relevant work to Lobster industry/Project on-going with the lobster industry/ past projects	Links
Dr. Trevor Avery	Biology	Marine biologist/biostatistitian with research interests in population dynamics.	Interested in lobster population dynamics, long-term data sets and trends.	
Dr. Mike Stokesbury	Biology	Canada Research Chair specializing in marine animal movement, distribution and measures of abundance and quantifying how human activities in the coastal zone impact fish movement. Member of the Fish Tracking Network.	Currently involved in a large project (with the University of Mass School of Marine Science and Technology (SMAST) and an industrial partner) to produce absolute abundance estimates of sea cucumbers off the coast of NS using drop camera survey methods. We believe these methods could be used to survey lobster populations.	
Dr. Matthew McSweeney	Nutritian & Dietetics	Food scientist specializing in value added food product development and consumer sensory testing (Matt is Director, Centre for the Sensory Research of Food)	Interested in developing value added lobster products and consumer sensory testing. Have been involved in two lobster sensory trials.	
Dr. Don Stewart	Biology	Molecular ecologist/geneticist	Currently working with a sea cucumber fisher/producer to assay genetic variability and population size. These methods may be useful within the lobster industry.	
Dr. Danny Silver	Computer Science	Machine learning & data analytics - Director of the Acadia Institute for Data Analytics	Significant experience in all sectors, including agriculture/fisheries.	
Dr. Richard Karsten	Math & Stats	Tides and tidal currents, marine forecasts, sediment modelling, modelling marine life movements, impacts of climate change on Bay of Fundy	Significant marine modelling expertise (forecasts, sediment modelling, marine life movements, climate change). PI on large CFI project examining the role of tidal turbines in the Bay of Fundy. This project examines various aspects of marine ecology.	

Dr. Kirk Hillier	Biology	Olfactory processing, and the relationship between odours and an animal's behaviour. We look at the very basis of insect pheromone processing, developmental control of pheromone perception and related neuroanatomy	Expertise in invertebrate neurophys may help develop better lobster baits or traps– adapting strategies for electroantennograms to aquatic studies. Other possible projects include using neurophys/behavioral studies to look at the effects of pollution, environmental hazards, human activities, etc on lobster behavior.	
Dr. Russell Easy	Biology	Genomics and proteomics exploring gene signatures and stress biomarkers in vertebrate and invertebrate species	Involved in 2 lobster-related projects, including a project to develop an artificial lobster bait using fish-derived proteins and a project to develop alternative uses for lobster shells.	
Dr. Suzanne (Suzie) Currie	Biology	Comparative animal physiologist: understanding how animals cope with environmental stress in marine and freshwater environment	Studies investigating the inherent plasticity (flexibility) of fish to cope with stressful conditions, such as climate change, that can be applied to lobster.	https://www.researchgate.net/profile/Suzanne_Currie
Dr. John Colton	Community Development	Socio economic impacts, sustainable community development, social acceptance & community engagement, community based agreements		
Dr. Shelley McDougall	Business	Capital investment in innovative technologies, innovation funding and financing, ecofiscal policy		
Dr. Graham Daborn	Biology	Ecological processes of the Bay of Fundy; effects of dams and energy extraction on biophysical processes; dynamics of plankton, fish, benthos and sediments		
Dr. Anna Redden	Biology	Marine ecology, acoustic detection and tracking of marine life (fish, marine mammals and lobster), environmental effects monitoring in high flow tidal sites	Led a significant number of projects looking at various aspects of marine ecology, acoustic detection and tracking of marine life, environmental monitoring, etc. All of this work is applicable to the lobster industry.	
Dr. Paul Arnold	Engineering	Research and industrial experience in fish and shellfish waste management. Previously employed with National Sea Products as a project engineer for the company's meal plant operations in Nova Scotia and Newfoundland.	Interested in creating value-added products from fish and shellfish waste.	

Dr. Vlad Zamlynyy	Chemistry	Corrosion Inhibitors and other barrier materials, biomimetic materials, biosensors and fuel cells	Involved in a project with a boat building company to examine boat corrosion protection using sacrificial anodes. Continued research may lead to an improvement in existing boat corrosion protection practices, benefiting the lobster industry as well as other related maritime industries that employ small watercraft.	
Dr. Donna Sears	Business	Marketing and hedonic consumption, tourism		
Dr. Brian VanBlarcom	Economics	Assessing the economic impacts of various industries on the local (sub-provincial) economies.	Led various projects for government & funding agencies incl: Assessing the Economic Impacts of a Michelin Tire \$500 Million Expansion on the Kings County Economy, Assessing the Potential Economic Impact of Tidal Power Development in Nova Scotia & the Agriculture and Food Processing Industries in Kings County 2001-2010: An Input Output Analysis	
RESEARCH CENTRES				
Acadia Institute for Data Analytics (AIDA)	Computer Science	Data Analytics focussed on agriculture, fisheries, food production, the environment, and green energy.		https://aida.acadiau.ca/home.html
Acadia Tidal Energy Institute (ATEI)	Multidisciplinary	Expertise in the socio-economic, environmental and physical properties of the Bay of Fundy and surrounding waters		http://tidalenergy.acadiau.ca/research.html
Coastal Ecology Lab	Biology	Quantifies and predicts the impacts of anthropogenic development on energy transfer in aquatic ecosystems using economic and culturally important fish species as indicators of ecosystem function and productivity.		http://coastalecology.acadiau.ca/Home Page.html
Acadia Laboratory for Agri-food and Beverage (ALAB)	Chemistry	Analytical lab providing state of the art research and analytical services to the wine, craft beverage and food industries.		http://alab.acadiau.ca/home.html
Centre for the Sensory Research of Food	Nutrition	Provides opportunities to the food industry for developing and reformulating products		https://nutrition.acadiau.ca/sensory-research-of-food.html

Cape Breton University (CBU)

Contact: Sarah Conrod (Manager, Industry Partnerships & Research Commercialization) (902) 563-1842 sarah_conrod@cbu.ca

Professor/Instructor/Technician	Department	Field(s) of Research / Service provided/ Service to be provided	Relevant work to Lobster industry/Project on-going with the lobster industry/ past projects	Links
Dr. Stephanie MacQuarrie	Chemistry	Innovative waste management for lobster shells - repurposing them into secondary products - processing (automation/labour)	Can assist by reducing disposal costs for lobster processors, provides potential secondary products, can have community impacts as immediate use for shells can eliminate odor from residual products.	
Dr. Stephanie MacQuarrie	Chemistry	Research around optimal filtration / new technologies to be used in shipping lobster over long distances / prolonged periods of time - transportation/holding/live storage	To assist in maintaining high quality product over longer storage / shipment times.	
Dr. Bruce Hatcher	Biology	Research on the impacts to lobsters and other aquatic life from environmental changes as well as from development projects that disrupt sea bed or areas bordering same.	For monitoring lobster migration due to changes in natural environment or other variables.	
Dr. Katherine Jones	Biology	Lobster biology/Impact of climate change		
Dr. Tim Rawlings	Biology	Lobster biology/Impact of climate change		
Dr. Martin Mkandawire	School of Science and Technology	Plastics		
Dr. Stephanie Gilbert	School of Science and Technology	Processing/automation/labour		
Dr. Beth Mason	Verschuren Centre for Energy and the Environment	Agriculture & Food Technologies, Aquaculture, Plastics, Lobster biology/Impact of climate change	The Verschuren Centre's Agri-marine platform focuses on conversion of marine co-products into high value feed and food ingredients. A biorefinery project currently underway converts marine byproducts into development of cutting-edge technology that turns unused marine biomass into commercial goods for feed, plant and food markets.	http://www.verschurencentre.ca/index.php/research/research-themes/agri-marine-industries
Dr. Sahand Ashtab	Shannon School of Business	Socio-economic impact		
Dr. Robert Campbell	Shannon School of Business	Socio-economic impact		

Dr. Jasmine Alam	Shannon School of Business	Socio-economic impact		
Dr. Keith Brown	Shannon School of Business	Socio-economic impact		

Dalhousie University				
Contact: Jolene McEachern (Manager, Truro and Halifax, Industry Liaison and Innovation) 902-(902) 956-9659 jmaceachern@dal.ca				
Professor/Instructor/Technician	Department	Field(s) of Research / Service provided/ Service to be provided	Relevant work to Lobster industry/Project on-going with the lobster industry/ past projects	Links
Dr. Fraser Clark	Animal Science and Aquaculture	How do lobster respond to pathogens, pollution (agriculture and aquacultural pesticides) , storage , reproduction, larval health and survival, ocean acidification and climate change (temperature).	Projects with Sydney Harbour (Tar ponds); several projects with Clearwater on storage; recently completed a report for Northern Pulp regarding the potential impacts on lobsters with their new treatment plan	
Dr. Tyedmers Peter	Resource & Environmental Studies	New Zealand,Rock Lobster Fishery	Life Cycle Environmental Impacts of the New Zealand Rock Lobster Fishery	
Dr. Vinci Thomas	Philosophy - Arts & Social Sciences	New Zealand, Rock Lobster Fishery	Kantian - Cartesian Studies	
Dr. Walde Sandra	Biology - Science	New Zealand, Rock Lobster Fishery	Disturbance and Biodiversity in Streams	
Dr. Gill Thomas	Process Engineering & Applied Science	lobster	Processing and Packaging of Lobster Tomalley Reference Samples	
Dr. Prithviraj Balakrishnan - Raj	Agri-Plant, Food & Environmental Sciences	Plant Diseases/Pathology,lobster shells	Evaluation of lobster shell waste for plant disease management	
Dr. Robert Scheibling	Biology - Science	Oceans, Oceans and Inland Waters, Oceans and Seas,Ocean Acidification ,Climate Change,American Lobster, Multi-Stressor Effects, Biology	Elise Keppel - Climate Change Effects on Lobster Biology and Ecology	
Dr. Sarah Stewart-Clark	Agri-Animal Science & Aquaculture	Agriculture & Food Technologies, Aquaculture, lobster	Is Green Crab a Risky Bait for the Lobster Industry?	
Dr. Gill Thomas	Process Engineering & Applied Science	Products/By-products, Energy	Advisory Assistance and Technical Support in Development of Marketable By-Product From Lobster Processing Discards	

Dr. Leon L. Josh	Electrical & Computer Engineering	First Nations	Lobster Parting Technique Study	
Dr. Anderson Derek	Agri-Animal Science & Aquaculture	Agriculture and Food Technologies	Evaluation of local lobster shell as an alternative calcium source for laying hens	
Dr. Robert Warner	Mechanical Engineering	Engineering	Design of a novel lobster trap with NS based company	http://nspddc.ca/about-the-centre/
Dr. Matt d'Entremont	Mechanical Engineering	Engineering	Design of novel lobster bands with NS based company	
Faculty of Engineering at Dal's Halifax and Agricultural Campus in Truro	I.e.: Dr. Young Chang , Dr. Travis Esau, Dr. Gordon Price, Sophia He and others	Engineering	Young Chang: sensor development and imaging technology; Travis Esau: automation and mechanization; Gordon Price: Innovative Waste Management; and Sophia He: Chemical Engineering on biofuels and polymers which have included products for the protection of boats in the aquaculture sector.	https://www.dal.ca/faculty/engineering.html
Sara Iverson, Scientific Director	Ocean Tracking Network	Animal Tracking	Studies included looking at expansions of mussel farms on lobster distribution (C. McKindsey, IML, Gulf of St. Lawrence), lobster movements around tidal power sites in the Minas Basin (Anna Redden, Acadia, PI), and current work on winter movements of lobsters in the Bay of Fundy (Citizen scientists Darrin Porter in association with OTN). And we tracked the Amazing Race Canada Lobsters.	http://oceantrackingnetwork.org/research/
Dr. Boris Worm	Biology	Marine Biodiversity in space and time, Ecosystem Oceanography,	Ecosystem oceanography: understanding the dynamics of a changing ocean' comes from the National Science and Engineering Research Council of Canada. Analyze the causes & consequences of recent changes in marine food webs. Attempt to analyze the potentially complex interdependencies of observed changes in predator & plankton abundance throughout the world's oceans.	
John Batt, Manager	Aquatron Laboratory	Canada's largest university aquatic research lab	Advisory Assistance and Technical Support in Development of Marketable By-Product From Lobster Processing Discards	

Doug Wallace, CERC-Ocean	Oceanography	Ocean carbon cycle, Ocean-atmosphere exchange, Ocean time-series observations		
	Marine Affairs Program, Faculty of Science		Multiple Options	https://www.dal.ca/faculty/science/marine-affairs-program/research.html

Mount Saint Vincent University (MSVU)

Contact: Danielle Goodfellow (Industry Liaison Officer) (902) 420-5270 danielle.goodfellow@smu.ca

Professor/Instructor/Technician	Department	Field(s) of Research / Service provided/ Service to be provided	Relevant work to Lobster industry/Project on-going with the lobster industry/ past projects	Links
Dr. Bohdan Luhovyy	Applied Human Nutrition	Functional foods and food derived bioactivities, product development, human food trials and sensory evaluation		http://www.msvu.ca/en/home/programsdepartments/professionalstudies/appliedhumannutrition/facultyprofiles/BohdanLuhovyy.aspx

Nova Scotia Community College (NSCC)

Contact: Dwayne MacLeod (Community Innovation Lead) 902-670-5152 dwayne.macleod@nsc.ca

Professor/Instructor/Technician	Department	Field(s) of Research / Service provided/ Service to be provided	Relevant work to Lobster industry/Project on-going with the lobster industry/ past projects	Links
Dr. Craig Brown	Applied Research	Seafloor Habitat Mapping/Ocean technology R&D	Predictive habitat maps of scallop and lobster habitat - Bay of Fundy (DFO and Full Bay Scallop Association)	https://www.cbu.ca/faculty-staff/faculty/bruce-hatcher/
		Underwater Imaging Systems	Collaboration with Cape Breton Fish Harvesters Association	https://cogsnscc.maps.arcgis.com/apps/Cascade/index.html?appid=cf032e114519410f8237da2390e9bc06
Dr. Mathew Vankoughnett	Applied Research	Ecosystem ecologist, biogeochemical cycling, plant ecology, ecophysiology, microbial ecology, and global change ecology.	Climate Change (impact on lobster taste); Use of lobster waste as fertilizer; Recipe development for value-add products	
Dr. Wayne Groszko	Applied Research	Energy research including Sensors (Weather, energy, other)	Fuel economy, vessel electrification/hybrid power	
Dr. Timothy Webster	Geomatics Research	Coastal mapping of habitats; Mapping migration patterns due to Climate Change		
Mr. Jay Harris	Data Analytics	Market Pricing		

Saint Francis Xavier University (StFX)

Contact: Andrew Kendall (Manager, Industry Liaison) (902) 867-3660 akendall@stfx.ca

Professor/Instructor/Technician	Department	Field(s) of Research / Service provided/ Service to be provided	Relevant work to Lobster industry/Project on-going with the lobster industry/ past projects	Links
Dr. Shajahan Gulam Razul	Chemistry	Modelling and applied experimental work in biochemistry, Biomolecular Simulations, utilizing Molecular Dynamics, Dissipative Particle Dynamics and Monte Carlo techniques. Agri-Food systems, Analytical chemistry, food preservation	(1) Reducing Freezing Damage to Lobster Meat: Development of a novel cryoprotectant for raw lobsterélobster meat. (2) Measuring Lobster Fullness: Development of a non-invasive & portable tool for accessing meat content in live lobster, and (3) Preserving Meat Quality During High Pressure Processing	Razul Research Lab
Dr. David Risk	Earth Sciences, Altus Group Chair in Emissions Research	Technology development; measurement of gas emission from soils, isotope tracers, and sensor techniques; natural ecosystems, soil microbial dynamics in cold ecosystems; Energy industry sensor techniques to detect fugitive emissions (gas leaks) in energy developments.	Signal transformation, embedded software and associated tech hardware for lobster fullness tool research project	Fluxlab
Dr. Russell Wyeth	Biology	Invertebrate neuroethology, behaviour, and neurobiology. Neural control of navigation in sea slugs, snail sensory systems, and odour-based navigational strategies. SCUBA, video analysis of behaviour, confocal microscopy, electrophysiology, mathematical modeling, lobster physiology, lobster health	Lobster health, working on mechanics to secure lobster in lobster fullness tool research.	Wyeth Lab
Dr. Russell Wyeth	Biology	Assay system for testing different potential baits to identify ‘best’ baits (nutrition, cost, availability)	Identifying more efficient but still cost-effective baits, without bothering or imposing on fishers who cannot afford any down-time to undertake field testing.	Wyeth Lab
Dr. Russell Wyeth	Biology	Optimal Lobster bait and trap configurations for more efficient capture and resource management (e.g., relative positions of traps, kinds of bait, soak times, etc.)	Good evidence that lobster bottom travel activity & bottom travel patterns are strongly influenced by odour plumes from bait in traps. Knowledge can be used to trap lobsters more effectively (of interest for fishing on the shelf areas, provide more fishing efficiency, & resource management knowledge).	Wyeth Lab

St. Mary's University (SMU)				
Contact: Kevin Buchan (Director, Office of Innovation and Community Engagement) (902) 491-6297 kevin.buchan@smu.ca				
Professor/Instructor/Technician	Department	Field(s) of Research / Service provided/ Service to be provided	Relevant work to Lobster industry/Project on-going with the lobster industry/ past projects	Links
Dr. Pawan Lingras	Mathematics and Computing Science	Data mining, artificial intelligence, soft computing, information retrieval, image recognition		http://www.smu.ca/research/dr-pawan-lingras.html
Dr. Jason Rhinelander	Engineering	Machine learning, big data applications, underwater SONAR imagery for automated identification of objects.		http://www.smu.ca/research/dr-jason-rhinelander.html
Dr. Anthony Charles	Environmental Science/ Finance, Information Systems and Management Science	Fisheries economics, fishery rights, fishery management and governance, policy and planning, Indigenous fisheries		http://smu-facweb.smu.ca/~charles/

Université Sainte Anne (U-SA)				
Contact: Valérie Lalonde (Agente de recherche et développement) (902) 260-3110 valerie.lalonde@usainteanne.ca				
Professor/Instructor/Technician - Professeur/Instructeur/Technicien	Department	Field(s) of Research / Service provided/ Service to be provided - Domaine(s) de recherche / Service fourni / Service à fournir	Relevant work to Lobster industry/Project on-going with the lobster industry/ past projects - Travaux pertinents pour l'industrie du homard / Projet en cours avec l'industrie du homard / Projets antérieurs	Links / Liens
Michelle Theriault	Centre de recherche marine / Center for Marine Research	Live Lobster Quality / Qualité du homard vivant	Lobster Handling, Lobster Handling Course, Lobster Transport, Lobster Physiology, Industry Training / Manipulation du homard, cours de manipulation du homard, transport du homard, physiologie du homard, formation industrielle	https://www.usainteanne.ca/centre-de-recherche-marine
Aleasha Boudreau	Centre de recherche marine / Center for Marine Research	Lobster Physiology / Physiologie du homard	Technical work on lobster handling, holding and transport / Travaux techniques sur la manipulation, la détention et le transport du homard	https://www.usainteanne.ca/centre-de-recherche-marine

Daniel Lane	Science - Centre de recherche marine / Center for Marine Research	Fisheries Management, Climate Change / Gestion des pêches, changement climatique	Natural Resources System Modeling, Lobster Molt Predictive Analyses / Modélisation des systèmes de ressources naturelles, analyses prédictives de la mue du homard	https://www.usainteanne.ca/contact/campus-de-petit-de-grat/daniel-lane
Valerie Lalande	Laboratoire d'innovation en science et en industrie / Laboratory for Innovation in science and industry	Biochemistry, Microbiology, Genetics / Biochimie, microbiologie, génétique	Holding systems chemistry & microbiology evaluation and optimization. Lobster genetics & transcriptomics analyses / Évaluation et optimisation de la chimie et de la microbiologie des systèmes de conservation. Analyses génétiques et transcriptomiques du homard	https://www.usainteanne.ca/lisi

Fishermen and Scientists Research Society of Nova Scotia

Contact: Shannon Scott-Tibbetts (Director of Operations) ph: (902) 461-8119 email: Shannon.Tibbetts@fsrs.ns.ca or info@fsrs.ns.ca website: <https://fsrsns.ca/>

A non-profit organization, is an active partnership between fishermen and scientists to establish and maintain a network of fishermen and scientific personnel that are concerned with the long-term sustainability of the marine fishing industry in the Atlantic Region.

A partnership based on effective communication and common goals between fishermen, scientists and the general public facilitates collaborative research and the collection of relevant information that promotes the conservation of North Atlantic fisheries stocks.

Lobster Research / Service Expertise prepared by Springboard Atlantic Inc. and Atlantic Canada Opportunities Agency

Province: **Prince Edward Island**

Holland College				
Contact: Shawn MacDougall (Manager Research Development) (902) 566-9642 SAMacDougall@hollandcollege.com				
Professor/Instructor/Technician	Department	Field(s) of Research / Service provided/ Service to be provided	Relevant work to Lobster industry/Project on-going with the lobster industry/ past projects	Links
Chef Allan Williams	Canada's Smartest Kitchen	Product Development, bi-product/waste utilization	Value added products	https://www.smartestkitchen.ca/
Chef Michael Bryanton	Canada's Smartest Kitchen	Product Development, Sensory, enzymatic reactions in cooking, organoleptic studies	Lobster Processing, value added products	https://www.smartestkitchen.ca/
Chef Jennifer Bryant	Canada's Smartest Kitchen	Food Styling	Sell Sheets, Marketing	https://www.smartestkitchen.ca/
			Examples of completed projects:	
			Conducting sensory trials on their cook times for lobster.	
			Ready-to-serve- lobster sauce for foodservice market. Also developed a Lobster Bisque Product	
			Reformulation of bonded and non-bonded formed lobster products (2015-16). Developed a "Lobster Slurry product (2017).	
			Reformulation of lobster dip.	
			Provided corporate Chef Services at an international seafood show.	
			Recipe development for showcasing products.	
			Corporate Chef Services at international seafood expo	
			Food Styling, food photography for marketing project.	

University of Prince Edward Island

Contact: Marc Richard (Synapse - Technology Transfer and Industry Liaison Officer) (902) 894-2877 marc@synapsepei.com

Professor/Instructor/Technician	Department	Field(s) of Research / Service provided/ Service to be provided	Relevant work to Lobster industry/Project on-going with the lobster industry/ past projects	Links
Bishnu Acharya	Engineering	Bioprocessing and conversion of waste products to value added products - Plastics and alternatives		http://www.upei.ca/engineering/faculty/bishnu-acharya
Ali Ahmadi	Engineering	Printing of Biomaterials; Bio-sensors; Lab-on-a-chip	Printing Chitosan based polymers	http://www.upei.ca/engineering/faculty/ali-ahmadi
Nadja Bressan	Engineering	Big Data to Knowledge; SCADA applications; design, modeling and control of mechatronic systems		http://www.upei.ca/engineering/faculty/nadja-bressan
Nick Krouglicof	Engineering	Opto-Mechatronics; Intelligent Sensors and actuators for unmanned vehicles; Machine Vision		
Grant McSorley	Engineering	Product lifecycle management, Systems engineering and Integrated product development		http://www.upei.ca/engineering/faculty/grant-mcsorley
Trung Ngo	Engineering	Robotics and Intelligent Systems		http://www.upei.ca/engineering/faculty/trung-ngo
William Whelan	Engineering	Processing automation (imaging of shell fragments in meat)		
CERC Aquatic Epidemiology	AVC	Address gaps in knowledge on the dynamics between aquatic ecosystems health and health management of aquaculture		
Dr. Spencer Greenwood	AVC	Lobster Pathogens, Lobster genomics		http://www.upei.ca/avc/spencer-j-greenwood