

Programme ONCOPOLE – Avis d'intention admissibles

#	Titre du projet	Mots-clés	Équipe		
			Chercheur (s) principal (aux)	Université (s)	Institut (s)/Centre (s)/Département (s)
01	Development of precision therapeutic vaccines against myeloid leukemias.	Cancer immunotherapy, mass spectrometry, phosphatases, vaccines, bioinformatics, tumor-specific antigens.	Claude Perreault	Université de Montréal	Institut de recherche en immunologie et en oncologie IRIC
02	Using big data to measure the costs and benefits of high-quality colorectal cancer care in Quebec.	Colorectal cancer, cancer care quality, patient-centred care, costs, clinical variation, administrative health data.	Erin Strumpf Geetanjali Datta	Université McGill Université de Montréal	Dept. of Economics, Dept. of Epidemiology, Biostatistics and Occupational Health Centre de recherche du CHUM
03	Eliminate tumor cells infiltrated into the brain using a radioactive matrix.	Brain tumor, Radiotherapy, Chemoattractant, Hydrogel, Radioisotope.	Nathalie Fauchoux	Université de Sherbrooke	Département de génie chimique et de génie biotechnologique
04	Optimizing care for castration-resistant prostate cancer patients using dual-tracer molecular imaging and targeted radioligand therapy.	Castration-resistant prostate cancer (CRPC), Positron emission tomography imaging, Targeted radioligand therapy, Dual-tracer 68Ga-PSMA/68Ga-Octreotate, Inpatient intermetastasis polyclonality, Early recurrence CRPC.	Brigitte Guérin Frédéric Pouliot Jean-Mathieu Beauregard	Université de Sherbrooke Université Laval Université Laval	Sherbrooke Molecular Imaging Center, CRCHUS CHU de Québec Centre de recherche CHU de Québec
05	Novel strategies to prime cancer immunotherapy.	Mesenchymal stem cells, Immunoproteasome, Cross-presentation, Immune checkpoint inhibitors, Nociceptor modulation, Exosomes.	Mouthih Rafei Sébastien Talbot	Université de Montréal Université de Montréal	Dept. of Pharmacology and Physiology Dept. of Pharmacology and Physiology

#	Titre du projet	Mots-clés	Équipe		
			Chercheur (s) principal (aux)	Université (s)	Institut (s)/Centre (s)/Département (s)
06	Collective governance in the Quebec Cancer Network: a realist evaluation of emerging mechanisms of institutionalization, multi-level governance and value creation using a longitudinal multiple case study design.	Governance, costs analysis, expérience de soins des patients, Resources use, Étude de cas longitudinale, Realistic evaluation.	Dominique Tremblay Nassera Touati	Université de Sherbrooke (Campus de Longueuil) École nationale d'administration publique (ENAP) (Montréal)	Centre de recherche de l'Hôpital Charles-Le Moyne (CRHCLM) Centre de recherche de l'Hôpital Charles-Le Moyne (CRHCLM)
07	Targeting the DNA Damage Response for Novel Anti-Cancer Therapy.	DNA repair, DNA damage response, Synthetic lethality, Non-oncogene addiction Radiotherapy, Chemotherapy.	Alain Nepveu Anne Marinier Alexandre Orthwein	Université McGill Université de Montréal Université McGill	Goodman Cancer Research Centre Institut de recherche en immunologie et en oncologie IRIC Institut Lady Davis
08	Developing precise management strategies involving new DNA repair targeted chemotherapies for women with ovarian cancer	Ovarian cancer, Genetic testing, Cancer predisposition, Precision medicine, Chemotherapy response, DNA repair pathways.	Patricia Tonin Walter Gotlieb Ioannis Ragoussis	Université McGill Université McGill Université McGill	Research Institute -MUHC Segal Cancer Center, Jewish General Hospital Genome Quebec Innovation Centre
09	The role of lifestyle factors and patient engagement on improving ovarian cancer prognosis	Ovarian cancer, Lifestyle Physical activity, Diet, Patient engagement, Prognosis.	Anita Koushik Marie Plante Marie-Pascale Pomey	Université de Montréal Université Laval Université de Montréal	Centre de recherche du CHUM CHU de Québec Centre de recherche du CHUM

#	Titre du projet	Mots-clés	Équipe		
			Chercheur (s) principal (aux)	Université (s)	Institut (s)/Centre (s)/Département (s)
10	Development of a digital health tool for management of chemotherapy and targeted therapy side effects.	Cancer, chemotherapy, targeted therapy, self-management, application, quality of life.	Julie Lemieux Marie-Pierre Gagnon	Université Laval Université Laval	Centre de recherche du CHU de Québec Faculté des sciences infirmières
11	Identifying molecular markers of aggressive breast lesions with a high likelihood of progressing to invasive breast cancer.	Cancer du sein, lésions mammaires, biomarqueur données –omiques, apprentissage machine, continuum de risque/prévention	Francine Durocher	Université Laval	Centre de recherche du CHU de Québec
12	Identifying individuals at-risk for hereditary cancers using a decision support tool integrated into the Electronic Medical Record of Family Medicine Groups: Proof of concept.	Hereditary cancers, screening, genetic testing, tool development, primary healthcare, prevention.	Michel Dorval Hermann Nabi Pavel Hamet	Université Laval Université Laval Université de Montréal	Centre de recherche du CHU de Québec Centre de recherche CHU de Québec Centre de recherche du CHUM
13	A Phase 1/2 study of Trametinib for pediatric neuro-oncology patients with refractory tumor and activation of the MAPK/ERK pathway.	Trametinib, glioma, plexiform neurofibroma, pediatric , MEK.	Sébastien Perreault	Université de Montréal	CHU Ste-Justine
14	Targeting the Pro-Oncogenic A-to-I Epitranscriptomic Mechanism Offering Precision Therapeutics in Aggressive Breast Cancer.	Therapy, Cancer Vulnerability, Prognosis, RNA editing, Paraspeckles, Breast Cancer.	Suhad Ali	Université McGill	Research Institute MUHC
15	Novel Combinatorial Immunotherapy for Pancreatic Ductal Adenocarcinoma.	Pancreatic ductal adenocarcinoma, immunotherapy, IGF, liver metastasis, combinatorial therapy, tumor microenvironment.	Pnina Brodt	Université McGill	Research Institute MUHC

#	Titre du projet	Mots-clés	Équipe		
			Chercheur (s) principal (aux)	Université (s)	Institut (s)/Centre (s)/Département (s)
16	Deciphering lung development to understand and treat pediatric lung cancer.	YY1, microRNA, FGF10, Mouse models, Pediatric lung cancer, DICER1 syndrome.	Lucie Jeannotte	Université Laval	Centre de recherche du CHU de Québec
17	Third-party Human Umbilical Cord Perivascular (HUCPV)-derived Mesenchymal Stromal Cells (MSC) to Treat Refractory or Steroiddependent Acute Graft-versus-Host Disease after Allogeneic Hematopoietic Stem Cell Transplantation in Children.	Leukemia, aGvHD, Mesenchymal Stem Cells, Umbilical Cord.	Henrique Bittencourt	Université de Montréal	Centre de recherche du CHU Sainte Justine
			Denis-Claude Roy	Université de Montréal	Hôpital Maisonneuve-Rosemont
18	Partnership initiative for the Evaluation of technological innovation in Radiotherapy (PERA).	Clinical Trial, Randomized, Registry, Radiotherapy, Technology, Patient-Reported Outcomes.	Cynthia Ménard	Université de Montréal	Centre de recherche du CHUM
19	Establishing a chemogenomic screening pipeline for high risk acute pediatric leukemias.	Acute leukemias, Chemogenomic, Human model system, CRISPR, High throughput screening, Drug discovery.	Brian Wilhelm	Université de Montréal	Institut de recherche en immunologie et en oncologie IRIC
			Frédéric Barabé	Université Laval	Centre Hospitalier de l'Université Laval (CHUL)
			Sonia Cellot	Université de Montréal	CHU Sainte-Justine
20	Using Single-Cell Epigenomics for Clonal Dynamics and Prognostic Risk Characterization in Pediatric and Young Adult Sarcoma Patients.	Pediatric and young adult sarcoma, Single-cell epigenomic profiling, Tumor clonal dynamics, Tumor microenvironment, Response to treatment, Prognostic risk biomarker signature.	Daniel Sinnett	Université de Montréal	Centre de recherche du CHU Sainte-Justine
			Nada Jabado	Université McGill	Research Institute MUHC
			Guillaume Bourque	Université McGill	Génomique Québec Innovation Centre

#	Titre du projet	Mots-clés	Équipe			
			Chercheur (s) principal (aux)	Université (s)	Institut (s)/Centre (s)/Département (s)	
21	Improving quality of life of women in chemotherapy for breast cancer: A cost-utility analysis of Telehealth to improve adherence to physical exercises.	Cost-utility, Breast cancer, Quality of life, Fatigue, Physical activity, Telehealth.	Michel	Tousignant	Université de Sherbrooke	Centre de recherche sur le vieillissement (CdRV)
			Thomas	Poder	Université de Sherbrooke	Centre de recherche du CHUS
22	Rationally designed approaches to target mRNA translation in eradicating poor outcome breast cancers.	Breast cancer, Cancer initiation, Immuno-Oncology, Transgenic mouse models, Tumour dormancy, Ductal carcinoma in situ.	William	Muller	Université McGill	Goodman Cancer Research Centre (GCRC)
			Luke	McCaffrey	Université McGill	Goodman Cancer Research Centre
			Jean-François	Côté	Université de Montréal	Institut de recherches cliniques de Montréal (IRCM)
23	Quantitative and multiplexed immunoplasmonics for cancer diagnosis.	Cancer, Biomedical technology, Pathology, Plasmonic nanoparticles, Cytology, Human health.	Michel	Meunier	École Polytechnique de Montréal	École Polytechnique de Montréal
			Dominique	Trudel	Université de Montréal	CHUM
			Louis	Gaboury	Université de Montréal	Institut de recherche en immunologie et en oncologie IRIC
24	Multidisciplinary approach for the therapeutic targeting of hard to treat cancers with new anti-cancer and anti-inflammatory therapies.	Thérapies combinées.,Nouvelles avenues thérapeutiques, Cancer de la vessie, Cancer du sein de type triple-négatif, Cancer du poumon, Cancer du côlon.	Isabelle	Plante	INRS	INRS-Institut Armand-Frappier
			Jean	Legault	Université du Québec à Chicoutimi	Département des sciences fondamentales

#	Titre du projet	Mots-clés	Équipe			
			Chercheur (s) principal (aux)		Université (s)	Institut (s)/Centre (s)/Département (s)
25	Targeting genome instability as an essential vulnerability in ovarian cancer.	DNA damage response, high-grade serous ovarian carcinoma, Ran GTPase, cell fate, PARP inhibitors, cellular senescence.	Anne-Marie	Mes-Masson	Université de Montréal	Centre de recherche du CHUM
			Francis	Rodier	Université de Montréal	Centre de recherche du CHUM
			Jean-Yves	Masson	Université Laval	Centre de recherche du CHU de Québec
26	All4ALL: fighting Acute Lymphoblastic Leukemia (ALL) together in Quebec.	All4ALL (Acute lymphoblastic leukemia), onco/pharmacogenomics, therapeutic drug monitoring, immune therapies, liquid biopsy, cancer biomarkers.	Jean-Marie	Leclerc	Université de Montréal	CHU Ste-Justine
			Maja	Krajnovoc	Université de Montréal	CHU Ste-Justine
			Julie	Bergeron	Université de Montréal	Hôpital Maisonneuve-Rosemont
27	Rationally designed approaches to target mRNA translation in eradicating poor outcome breast cancers.	mRNA translation, breast cancer, GEMM and PDX models, eIF4A inhibitor, eIF2a inhibitor, mTORC1 signaling.	Nahum	Sonenberg	Université McGill	Goodman Cancer Research Centre
			Josie	Ursini-Siegel	Université McGill	Lady Davis Institute for Medical Research
			Philippe	Roux	Université de Montréal	Institut de recherche en immunologie et en oncologie IRIC
28	Data-driven research and shared decision-making in prostate cancer.	Prostate cancer, Electronic consent, Data sciences/Machine learning, Clinical Decision Support Systems, Shared Decision-Making, Electronic Medical Records.	Philippe	Després	Université Laval	Centre de recherche du CHU de Québec
			Bartha Maria	Knoppers	Université McGill	Centre of Genomics and Policy
			France	Légaré	Université Laval	Centre de recherche du CHU de Québec

#	Titre du projet	Mots-clés	Équipe		
			Chercheur (s) principal (aux)	Université (s)	Institut (s)/Centre (s)/Département (s)
29	Development of a novel immunotherapy for bladder cancer based on the use of a novel TLR7/8 agonist.	Bladder cancer, Toll like receptor 7/8, Nanoparticles, Immunotherapy, Immune checkpoints, cold vs hot tumour.	Denis Leclerc Alain Lamarre	Université Laval INRS	Centre de Recherche en Infectiologie-CHU Québec Centre INRS-Institut Armand Frappier
30	Exploring T cell heterogeneity and understudied pathways to improve anti-cancer T cell therapies.	T cells, cancer immunotherapy, adoptive cell therapy, exhaustion, single cell RNA sequencing, CRISPR.	Nathalie Labrecque Martin Richer Heather Melichar	Université de Montréal Université McGill Université de Montréal	Centre de recherche Hôpital Maisonneuve-Rosemont Microbiology/Immunology Centre de recherche Hôpital Maisonneuve-Rosemont
31	e-IMPAQC: Implementation and evaluation of a mobile application for the realtime electronic assessment of cancer patient- and informal caregiver-reported outcomes to improve symptom burden and quality of life in Quebec.	Cancer, Electronic patient-reported outcomes, m-Health, Self-management, Symptom management, Quality of life.	Sylvie Lambert John Kildea David Roberge	Université McGill Université McGill Université de Montréal	CIUSSS ODIM - St. Mary's Research Centre Research Institute MUHC Centre de recherche du CHUM et CHUM
32	Création d'une plateforme d'immuno-évaluation et thérapeutique pour les patient atteints d'un myélome multiple.	Multiple myeloma, Immunotherapy, allogeneic stem cell transplant, Single cell RNA sequencing, cell therapy, Immune profiling.	Michael Sebag Richard LeBlanc	Université McGill Université de Montréal	MUHC Hôpital Maisonneuve-Rosemont
33	From Bench to Bedside: Novel Strategies to Screen and Treat Fatty Liver related Liver Cancer	Hepatocellular Carcinoma (HCC). Non-alcoholic liver disease (NAFLD). Imaging. Deep Learning. T cells. Innate Immunity.	Naglaa Shoukry Tang An Jennifer Estall	Université de Montréal Université de Montréal Université de Montréal et Université McGill	Centre de recherche du CHUM Centre de recherche du CHUM IRCM

#	Titre du projet	Mots-clés	Équipe		
			Chercheur (s) principal (aux)	Université (s)	Institut (s)/Centre (s)/Département (s)
34	Electronic record to optimize care throughout the complete trajectory of patients with cancer – a proof of concept.	Dossier numérique, Optimisation des parcours de soins, Étude de cohorte, Infirmière praticienne spécialisée, Coordination des soins, Recherche évaluative.	Aude Motulsky Tibor Schuster	École de santé publique de l'U de M Université McGill	Centre de recherche du CHUM  Faculté de médecine, département de médecine familiale
35	Bridging fundamental research to nutritional, physical activity and clinical interventions in colorectal cancer prevention.	Colorectal cancer (CRC) prevention, Anticancer nutripventive diet, Exercise training, Post-polypectomy, Healthy lifestyles, Cancer recurrence.	Borhane Annabi	UQAM	Centre de recherche BIOMED, Chaire en Prévention et Traitement du Cancer
36	Patient stratification for Anti-Angiogenic Therapies : prognostic and drug screening markers.	Liver metastases, vessel co-option, angiogenesis, patient stratification, imaging, liquid biopsies.	Peter Metrakos Janusz Rak	Université McGill Université McGill	Research Institute MUHC Research Institute MUHC
37	Lipidomics and its application to Colorectal Cancer Liver Metastasis (CRCLM): Innovative tools for risk assessment.	Mass spectrometry, Lipids, Biomarkers, Cancer, Liver.	Pierre Chaurand	Université de Montréal	Département de Chimie
38	Determining the best training modality during systemic cancer treatment to reduce cancer-related fatigue and treatment-induced side effects: a multicentric Quebec study.	Aerobic training, Mixed training, High-intensity interval training, Cancer-related fatigue, Cardiorespiratory and functional capacity, Cardiac dysfunction.	Michel Pavic Eléonor Riesco Mathieu Gayda	Université de Sherbrooke Université de Sherbrooke Université de Montréal	Centre de recherche du CHUS  Centre de recherche sur le vieillissement (CdRV) du CIUSSS de l'Estrie - CHUS Institut de Cardiologie de Montréal



#	Titre du projet	Mots-clés	Équipe			
			Chercheur (s) principal (aux)	Université (s)	Institut (s)/Centre (s)/Département (s)	
39	Stand-up-for-the-cure: Novel approaches toward innovative therapeutic options for the treatment of solid tumours in the advanced stages.	Multitargeted drugs, Polypharmacology, Tumour microenvironment, Cell signaling, Stem cells, Antibody-drug conjugate (ADC).	Bertrand René C.- Bassam	Jean-Claude Gaudrault Abdulkarim	Université McGill Université Laval Université McGill	Research Institute MUHC CRCHUQ Research Institute MUHC
40	Using transcriptome analysis and cellular deconvolution to improve biopsy performance, prognostic power, and treatment stratification in prostate cancer.	Transcriptomics, biopsy, prognostic signature, treatment stratification, cell deconvolution, immune cells.	Axel Andreas Étienne	Thomson Gagnon	Université McGill Université de Montréal	Research Institute MUHC Institut de recherche en immunologie et en oncologie IRIC
41	More Organ Preservation : High dose rate brachytherapy versus External beam radiation therapy Multicenter Study Proposal (Morpheus) – A randomized phase III study.	Organ Preservation, Watch and Wait, No surgery.	Té	Vuong	Université McGill	Jewish General Hospital
42	Novel approaches to prevent and lessen immunosuppression in allogeneic stem cell transplant recipients with chronic GVHD.	Stem cell transplantation, graft-versus-host disease, immune reconstitution, cytokines, microvesicules, lymphocytes.	Martin Jean	Guimond Roy	Université de Montréal Université de Montréal	Centre de Recherche de l'hôpital Maisonneuve-Rosemont Centre de Recherche de l'hôpital Maisonneuve-Rosemont
43	Exploiting metabolic and oxidative stress responses to prevent or overcome the therapeutic resistance in breast cancer.	Breast cancer, metabolomics, oxidative stress, Tumor metabolism, targeted therapies, PDX models.	Morag Michael Sylvie	Park Pollak Mader	Université McGill Université McGill Université de Montréal	Goodman Cancer Research Centre Lady Davis Institute for Medical Research / Segal Cancer Centre Institut de recherche en immunologie et en oncologie IRIC

#	Titre du projet	Mots-clés	Équipe			
			Chercheur (s) principal (aux)	Université (s)	Institut (s)/Centre (s)/Département (s)	
44	Comprehensive molecular and clinico-epidemiologic characterization of lethal prostate cancer in Quebec: Analysis of the prospective cohort of the PROCURE Biobank.	Prostate cancer, PROCURE biobank, Tumor profiling, Immune landscape, Liquid biopsies, Diet-Obesity-Epidemiology.	Armen	Aprikian	Université McGill	MUHC
			Simone	Chevalier	Université McGill	Research Institute MUHC
			Fred	Saad	Université de Montréal	CHUM
45	Gut Microbiome Regulation of the Tumor Microenvironment and Interactions with Diet and Concurrent Medication: Prognostic and Therapeutic Implications for Immunotherapy of Non-Small Cell Lung, Renal Cell and Urothelial Cancers.	Biobank of clinical data and biological samples, PD-1/PD-L1 Immunotherapy, Microbiota, Bladder-Kidney-and-Lung cancers, Liquid biopsies, Prognostic and theranostic biomarkers.	Yves	Fradet	Université Laval	Centre de recherche du CHU de Québec
			Philippe	Joubert	Université Laval	Institut universitaire de cardiologie et de pneumologie de Québec
			Bertrand	Routy	Université de Montréal	Centre de recherche du CHUM
46	Comprehensive Assessment of the Androgen Metabolome in Metastatic Castration-Resistant Prostate cancer.	Metastatic Castration-Resistant Prostate Cancer, Determinants of drug response, Patients' survival, Steroid metabolome, Pharmacogenomics, Genomics.	Chantal	Guillemette	Université Laval	CHU de Québec
			Louis	Lacombe	Université Laval	CHU de Québec
			Éric	Lévesque	Université Laval	CHU de Québec
47	CIIRAE: The Cancer Immunotherapies and Immune-Related Adverse Events Study.	Autoimmunity, Cohort study, T cell biology, Immune tolerance, Biomarkers.	Wilson	Miller	Université McGill	Jewish General Hospital-Lady David Research Institute
			Ciriaco	Piccirillo	Université McGill	Research Institute MUHC
			Marie	Hudson	Université McGill	Jewish General Hospital-Lady David Research Institute

#	Titre du projet	Mots-clés	Équipe			
			Chercheur (s) principal (aux)	Université (s)	Institut (s)/Centre (s)/Département (s)	
48	High-resolution mapping of cancer immunity for HER2-positive breast cancer patients during treatment.	Immuno-oncology, genomics, breast cancer, single-cell profiling, monitoring response to therapy, imaging.	Vanessa Dumeaux	Université Concordia	PERFORM Center	
			Réjean Lapointe			Université de Montréal
49	A novel adjuvant therapy for melanoma: the role of beta-blockers.	Ocular melanoma, adjuvant therapy, liquid biopsy, cutaneous melanoma, beta-blockers, animal model.	Miguel Burnier	Université McGill	MUHC	
			Goffredo Arena			Université McGill
50	Understanding and overcoming immune checkpoint blockade resistance in melanoma.	Melanoma, Immune checkpoint blockade resistance, CD73-adenosine, GSK-3, MNK1/2 inhibitors, Small molecule inhibitor (SMI) combination therapy.	Ian Watson	Université McGill	Goodman Cancer Research Centre Centre de Recherche Hôpital Maisonneuve-Rosemont CHUM	
			Christopher Rudd			Université de Montréal
			John Stagg			Université de Montréal
51	ONCOPOLE: MicroRNA therapeutics team.	MicroRNA, Therapeutics, Target identification, MicroRNA chemistry, Delivery optimization, Preclinical testing.	François Major	Université de Montréal	Institut de recherche en immunologie et en oncologie IRIC Fac. Pharmacie Dépt. biochimie et médecine moléculaire	
			Jeanne Leblond-Chain			Université de Montréal
			Gerardo Ferbeyre			Université de Montréal
52	Circulating DNA in Breast Cancer: a novel prognostic biomarker.	Liquid biopsy, prognosis, breast cancer, ctDNA, exosomes, biomarker.	Mark Basik	Université McGill	Lady Davis Institute Centre de recherche du CHUM	
			Saima Hassan			Université de Montréal
53	Therapeutic vulnerabilities in acute lymphoblastic leukemia.	Leucémie lymphoblastique aigue, Cellules souches leucémiques, Vulnérabilité thérapeutique, Interaction chimique et génétique, Biosenseurs.	Trang Hoang	Université de Montréal	Institut de recherche en immunologie et en oncologie IRIC	

#	Titre du projet	Mots-clés	Équipe		
			Chercheur (s) principal (aux)	Université (s)	Institut (s)/Centre (s)/Département (s)
54	Development of minimally invasive tests to follow the progression of prostate cancer.	Cancer de la prostate, Génomique, Protéomique, Métabolomique, Progression du cancer, Biomarqueurs	Jacques Lapointe	Université McGill	Research Institute MUHC
			Étienne Audet-Walsh	Université Laval	Centre de recherche du CHU de Québec
55	Immunosuppression and cancer risk in solid organ transplantation recipients: A province-wide 20-year retrospective cohort study.	Cancer, transplantation, cohort study, immunosuppressants, registry.	Ruth Sapir-Pichhadze	Université McGill	MUHC
56	Interdisciplinary Management of Bone Metastases.	Bone metastases, Interdisciplinary management, Pharmacological Intervention, Rehabilitation Intervention, Skeletal Related Events, Pathological Fractures.	Thierry Muanza	Université McGill	MUHC
57	PRÉCISION-Q: PROspective moIECular profling Strategies fOr paNcreatic cancer in Québec.	Pancreatic cancer, genetics, oncogenomics, homology-directed, DNA repair, precision oncology, mutli-centre.	George Zogopoulos Gerry Batist Mustapha Tehfe	Université McGill Université McGill Université de Montréal	RI-MUHC and Goodman Cancer Research Centre Lady David Institute (LDI) of the Jewish General Hospital Centre de recherche CHUM