



2021 – 2022

# ANNUAL REPORT



UNIVERSITY OF SASKATCHEWAN

Respiratory Research Centre

COLLEGE OF MEDICINE

[MEDICINE.USASK.CA/RESPIRATORYRESEARCH](http://MEDICINE.USASK.CA/RESPIRATORYRESEARCH)

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## Statement From Director

We are pleased to provide you with our 2021-22 Annual Report, which outlines the respiratory health research and knowledge translation activities conducted by the Respiratory Research Centre (RRC) between July 2021 and June 2022.

The six research seminars hosted by the RRC over the past year reflect the wide breadth of respiratory-related health research interests of our members. The quality and calibre of these presentations were exceptional and included both local and external researchers, as well as students funded by the RRC.



### Dr. Donna Goodridge



In follow-up to our James Lind Alliance Priority setting exercise on Obstructive Sleep Apnea completed in early 2021, a series of three animated videos addressing common questions raised by patients were produced in collaboration with patient partners and Lung Sask.

RRC members have continued to advance respiratory health through research, education, and engagement. Congratulations to our academic and research student awardees who received support through this year's research competitions.

We are excited to continue implementing our mission and expanding our methods for engaging with patients and families, community agencies, policy makers, and the academic community as we move into the next year. We have appreciated Dr. Robert Skomro's involvement in the RRC over the past five years and are grateful for the ongoing support of the Executive Committee. And, we welcome Dr. Juan Ianowski as an incoming member of our executive committee. Britney Duncan, Research Coordinator of the RRC, has continued to provide exceptional support to the members and executive of the RRC.



## Governance



**Dr. Julia Montgomery**

**Associate Professor,  
Department of Large  
Animal Clinical  
Sciences**



**Dr. Joshua Lawson**

**Professor, Canadian Centre for  
Health and Safety in  
Agriculture (CCHSA), Dept. of  
Medicine - Director of Research**



**Dr. Mark Fenton, MD, FRCPC**

**Associate Professor,  
Division Head,  
Respirology, Critical Care  
and Sleep Medicine**



## Governance

As established through the RRC Executive Member Terms of Reference, committee members serve 5-year terms. As a result of the nomination process held at the end of the academic term, we are excited to welcome Dr. Juan Ianowski to the Executive Committee. We will also bid a fond farewell to Dr. Robert Skomro who has served the RRC since its inception.



**Dr. Robert Skomro MD, FRCPC – *Outgoing***

**Professor, Respiriology,  
Critical Care and Sleep  
Medicine**



**Dr. Juan Ianowski – *Incoming***

**Associate Professor  
Anatomy, Physiology  
and Pharmacology**



# Membership

Membership to the RRC is open to clinicians, faculty, patient partners, students and organizational/community partners. Each year, the RRC undergoes its member renewal process where individuals have the opportunity to indicate level of membership as one of the following: Academic, Student, or Affiliate Members. This renewal process allows the RRC to more appropriately gauge levels of participation and determine eligibility for RRC-initiated funding opportunities.

Academic

31

Patient Partners

9

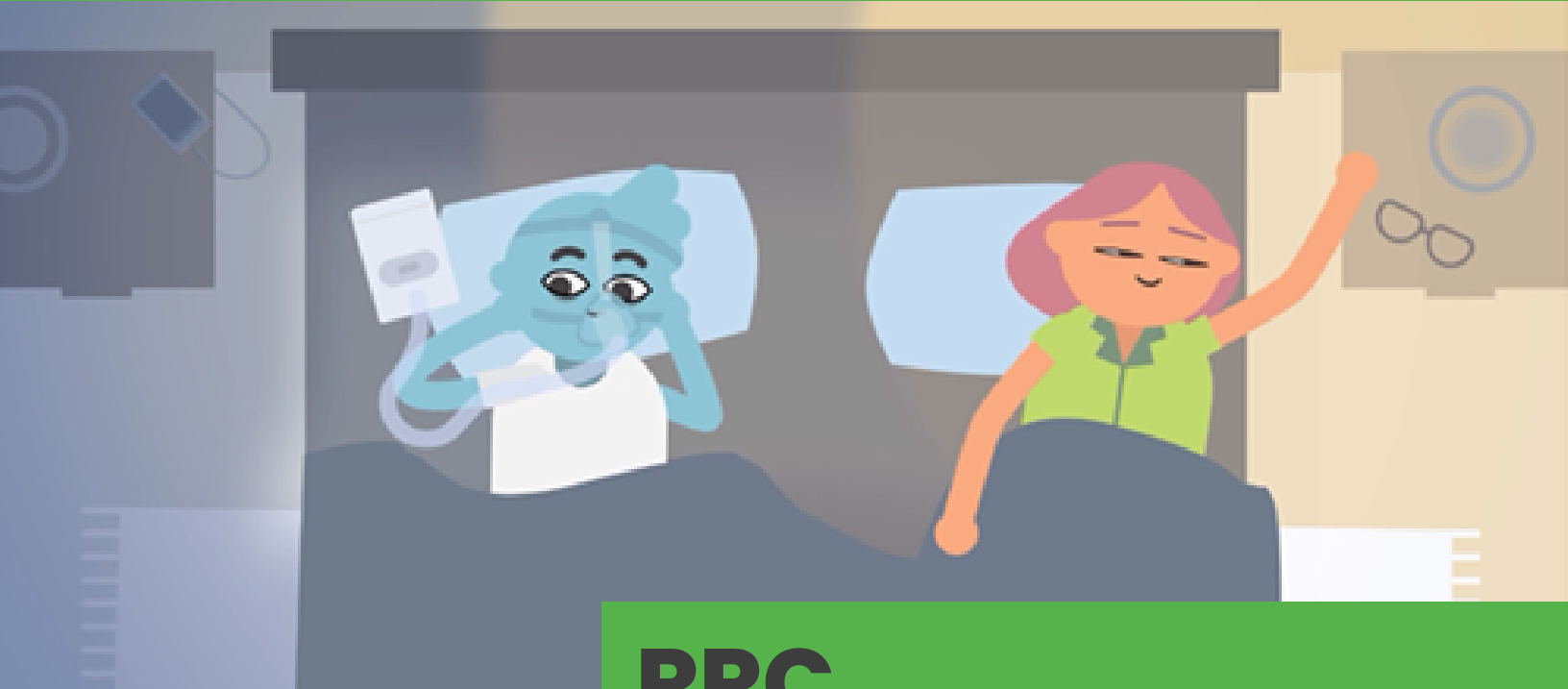
Students

06

Affiliates & e-News Subscribers

91





## RRC Updates

### JLA Follow-Up Activities

*A brief communication was also published in Thorax outlining our Top 10 Research Priorities and related findings. The article may be viewed [here!](#)*

As of a result of our James Lind Alliance Priority Setting Partnership conducted between 2019 and 2021, we were able to establish a "Top 10" list of research priorities for OSA in Saskatchewan. We also learned during this exercise that there were many questions from the public that were already answered but, were not easily accessible to OSA patients and families. The RRC developed animated "shorts" in an attempt to close that knowledge gap.



**James  
Lind  
Alliance**

Priority Setting Partnerships

In recognition of Sleep Week 2022, the RRC launched 3 animated videos with a focus on the diagnosis, treatment, and follow-up for obstructive sleep apnea (OSA). These videos were produced with the help of our patient partners and LungSask. To view the videos click [here!](#)

# Respiratory Research Centre



## RRC Updates

### RRC Visioning/Planning

Building on RRC's June 2021 discussion and identified model of RRC's niche and strengths in interdisciplinary collaborative research, RRC stakeholders met on October 13, 2021 to identify specific goals and actions. The facilitated discussion maximized engagement from stakeholders including association representatives, patients, clinicians, early career and experienced researchers, and university research leaders in visioning RRC's future directions.

Thanks to all who contributed their important insights to our planning, which has been pivotal to continuing to advance our mission.

The full report that resulted from this meeting may be found on our [website](https://medicine.usask.ca/respiratoryresearch).



## Knowledge Translation

### Research Seminars



The RRC hosted a virtual seminar series to afford members the opportunity to hear about current research projects/activities presented by fellow members and potential research partners. Seminars were recorded and are currently available via the RRC [website](#).

**"Ventilation system to reduce airborne transmission in buildings"**

Presenter: Dr Gurubulan Annadurai, *College of Engineering*

**"cAMP triggers Na<sup>+</sup> absorption by distal airway surface epithelium in cystic fibrosis swine"** Presenter: Dr. Xiaojie Luan, *Anatomy, Physiology and Pharmacology*

**"Nutrition Interventions & Dietician Involvement in the Treatment of COPD: A Systematic Review"** – Presenter: Kylie Bell (undergrad)

**"Application of artificial intelligence methods to lung disease research"** – Presenters: Drs. Lawson and Khanam, *CCHSA*

**"Novel techniques to predict Obstructive Sleep Apnea Severity during Daytime (Wakefulness) using Machine-Learning Algorithms"** Presenter: Dr. Zahra Moussavi (University of Manitoba)

**"Molecular behaviour of CFTR in primary epithelial cells in health and disease"** Presenter: Dr. Asmahan Abu Arish, *Anatomy, Physiology and Pharmacology*



## Award Recipients

### Graduate Student Award

During the 2021-22 academic term the RRC, in conjunction with the OVDR (ComGRAD competition), selected Gopinath Narasimhan as this year's award recipient. Each year, this cost-shared award is offered to students performing research in targeted areas.

Gopinath is a doctoral student working under the supervision of Dr. Bonnie Janzen in Community Health and Epidemiology. His research focuses on looking at how obstructive sleep apnea and other sleep disorders influence the association between gender (a social construct) and agricultural injury. Gopinath proposes to use a gender index (based on farm tasks/roles) to evaluate longitudinally the effect of sleep apnea in pre-defined pathways to injury occurrence. He also plans on leveraging his interdisciplinary background in epidemiology and biological/chemical engineering.



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*I hope results from this work will inform strategies and help formulate policy to help mitigate the impact of sleep disordered breathing in occupational injury.*

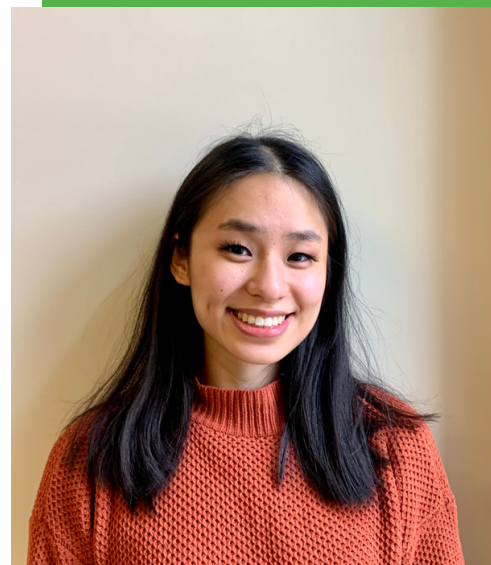
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## Award Recipients

### Summer Undergraduates

Bonnie is currently finishing up her third year of Physiology and Pharmacology at the University of Saskatchewan. She worked under the supervision of Dr. Anderson Tyan and Dr. Julia Montgomery on the novel transbronchial lung biopsy.



Ben Fenton is a fourth-year undergraduate student studying finance at the Edwards School of Business. Over the course of his undergraduate program, he has developed a keen interest in financial and economic modelling. During the summers, he has worked as a research assistant under Dr. Erika Penz in the Department of Medicine, where he has been able to develop his skills relating to health economic analysis and academic research.



## Award Recipients

### Team Building Grant

With the goal of a “discovery for healthy breathing” in mind, the Respiratory Research Centre (RRC) has established the Team-Building Grant to foster innovative research in the area of respiratory health. This funding opportunity aims to encourage collaborative research by funding inter-disciplinary teams conducting human health and translational research projects.

This year's successful applicant was **Alyson Kelvin BSc, PhD**, Research Scientist at Vaccine and Infectious Disease Organization (VIDO). Dr .Kelvin was awarded \$100,000 for her project, "Longitudinal clinical symptom and experience analysis of Long COVID cases in Saskatchewan using a triangulation, mixed method, study leveraging app- or web-based and focus group participation."



## Award Recipients

### Publications Fund

The RRC established a Publications Fund in order to support scholarly works related to respiratory health published by members. This funding opportunity aims to encourage knowledge translation activities of researchers conducting human health and translational research projects.

This years award recipients include:

Dr. Shelley Kirychuk, College of Medicine

Publication Title: *Effects of elevated CO<sub>2</sub> levels on lung immune response to organic dust and lipopolysaccharide*

Dr. John Gordon, College of Medicine

Publication Title: *D40 signaling augments IL-10 expression and the tolerogenicity of IL-10-induced regulatory dendritic cells*







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