
Dr. Goodbear's Den (Oral Presentation)

Dr. Goodbear's Den (GBD) will be held as part of Child Health Research Days (CHRD) on Thursday, October 22nd, in-person, in Alloway Hall (Manitoba Museum)

Selection of finalists who will proceed to Dr. Goodbear's Den

- Trainees with the top-ranked scores for their audio recording, and an independent score from the poster session, will move forward to GBD.

Specific guidance for audio recordings

- Each abstract presenter wishing to participate in GBD (opt-in at time of your abstract submission) must upload a brief audio recording (30-60 seconds) of their presentation
 - You will not be assessed based on audio quality but instead your ability to communicate your work
- Audio recordings should be recorded as an M4A or an MP4 File
- The file size must not exceed 100MB
- These files will be judged by J Protudjer, Chair, GBD; in partnerships with other CHRD judges. Prior to this judging, all conflicts of interest will be reported and judging assignments will be allocated accordingly

Format of Dr. Goodbear's Den

- Each finalist will have 3 minutes to present their work
- Finalists who exceed this time limit will be asked to stop their presentation. While they will still have the opportunity to take questions from the judges, they will be ineligible to win GBD.
- Presentation should focus on these three areas
 - **What**
 - What did you do?
 - Build a compelling story and a clear rationale for your work
 - **So what**
 - Do results of the study present new information?
 - Are the results widely applicable?
 - Are the results innovative and impactful?
 - What is the relevance to child health?
 - **Now what**
 - What are the next steps for your work?
 - Why is your work compelling?
- Each presentation will be immediately followed by 3 minutes of questions from the judges (see Section 3 below: Judging for GBD)
- Slides will be permitted as part of GBD, within the following guidelines
 - Each finalist will be introduced, immediately prior to their presentation. A title slide will be created for each finalist; this slide will contain the name, level of training and supervisor's name
 - Each finalist may choose to present one static slide (no custom animation)
 - Finalists are encouraged to remember that the venue at which GBD will be held is

- large; please refrain from using small font and small graphics
- The submitted slide must be emailed to [Amanda Pascoe](#) **no later than Friday, October 16th at 8:00 AM**; late submissions will not be accepted
 - Each finalist must copy their supervisor on this email

Scoring Rubric (Rough Outline)

- Presentations are scored across 4 categories, each with a score assigned between 1 and 5 (combined total of 20)
- Four categories being scored can be broken down as follows:

Overall quality of presentation	Builds a compelling story with a strong rationale; clear presentation - hypothesis, objectives and conclusion; a gap in knowledge is identified which the research presented seeks to resolve
Research Impact	Do the results of the study present new information? Are the results wide applicable? Are the results innovative and impactful?
Relevance to Child Health	Is the research relevant to child health with the potential to be compelling
Question and Answer	Rigor and quality of answers

Presenting Author Name

Sakshi Verma

Phonetic spelling of your (full) name

Saa-Kuh-shee

Presenting Author Category

Masters Student

Supervisor Name

Eric Hall

GBD Audio File

Sakshi Verma, CHRD Audio submission.mp4

Headshot

Sakshi Picture.jpeg

Short Bio (100 words)

Sakshi Verma is a Master's student in the Department of Human Anatomy and Cell Science at University of Manitoba, under the supervision of Dr. Eric Hall. Her research investigates the molecular mechanisms regulating cytoneme-mediated Notch signaling in normal and pediatric brain tumors. She has received several awards, including RFHS master's studentship, UMGF, and research poster awards, and has also delivered oral presentations at scientific conferences. Beyond research, Sakshi is actively involved in student advocacy and holds leadership roles within the graduate community.

Research Category

Basic Science

Abstract Title

Uncovering the Molecular Mechanism Regulating Cytoneme-Mediated Notch Signaling in Normal and Pediatric Brain Tumors

Authors

Name	Role	Profession
Sakshi Verma	Student	Graduate
Dr. Eric Hall	Principal Investigator	Assistant Professor

Background

The Notch morphogen signaling pathway is essential during development, tissue maintenance, and stem cell regulation. Dysregulated Notch signaling is linked to many cancers, including aggressive pediatric brain cancers like Diffuse Midline Glioma of the Pons (DMG-P). In DMG-P, ectopic Notch activity within the tumor and surround microenvironment promotes tumor stemness and resistance to radiation therapy. Notch ligands (JAG and DLL) and receptors (Notch) are transmembrane proteins, requiring direct cell-cell contact between ligand producing and receiving cells for signaling. However, Notch signaling can occur

over many cell diameters, but how this is achieved is unclear. Recently, long specialized filopodia (thin thread-like cellular extensions), called cytonemes have been identified to promote Notch signaling. Cytoneme-mediated Notch signaling requires the actin-based motor protein Myosin 10, but the underlying molecular mechanisms are unknown.

Objective

We are investigating: 1) which Notch pathway proteins localize to cytonemes; 2) whether these proteins regulate cytoneme formation; and 3) how these proteins are transported along cytonemes in healthy and DMG-P cells.

Methods

Using confocal microscopy combined with live imaging and new cell preservation and imaging approaches, we analyze healthy/DMG-P cells with endogenous/elevated Notch signaling. Pharmacological and genetic approaches are used to modulate cytoneme formation alongside overexpression or knockdown of Notch pathway components and cytoneme-associated proteins, including Myosin 10, to define mechanisms of Notch protein transport and pathway activation.

Results

DMG-P cells have a high frequency of cytoneme formation, and inhibiting cytoneme formation impairs Notch activity in DMG-P cells. We anticipate multiple Notch proteins localize to cytonemes, in both signal-sending and receiving cells and that these proteins promote cytoneme formation through Myosin 10-dependent transport and/or membrane diffusion.

Conclusion

This work will provide the first mechanistic insight into cytoneme-mediated Notch signaling in normal and cancer cells and establish a foundation for future therapeutic strategies targeting Notch-driven pediatric brain tumors.