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Welcome!

In 2011, the Students’ Union, with the support of the Undergraduate Research Initiative, held the U of A’s first Undergraduate Research Symposium with the goal of fostering cross-disciplinary awareness of undergraduate research and promoting broader student participation in research and creative activities. Since then, the Undergraduate Research Symposium, which later evolved into the Festival of Undergraduate Research & Creative Activities (FURCA), has become an annual celebration of undergraduate research in various forms, showcasing the curiosity and talents of undergraduate students across all disciplines.

Like many academic conferences in the COVID-19 era, FURCA 2021 has been adapted to an entirely virtual format for the first time. In addition to more than 100 student presentations from across 11 faculties, this year’s schedule features virtual networking sessions, mini-workshops, research roundtable discussions, and a student journal “show & tell” event. Our goal was not merely to provide students with an online platform for presentations in lieu of an in-person event, but to replicate — as closely as possible in an online environment — the rich interactions between students, faculty, staff, alumni, and the broader community.

We hope you enjoy FURCA 2021, and are as inspired as we are by our students, and by the resilience of our research community during these challenging times.
Thank you!

Thank you to our sponsors!

FURCA 2021 is made possible through the generous support of:

- University of Alberta Faculty of Science
- University of Alberta Students’ Union
- University of Alberta Faculty of Arts
- University of Alberta International
- University of Alberta Sustainability Council

Special thanks to:

- All faculty, staff, graduate students, postdoctoral fellows, and alumni who have generously volunteered their time to judge presentations throughout the week.
- University of Alberta Libraries, for their support in coordinating the judging process.
- The staff of the Career Centre and URI’s Peer Undergraduate Research Liaisons, for their support in planning and logistics.
- The Dean of Students’ Communications team, for their support in design and promotions for FURCA.
- All of the undergraduate researchers, mentors, advocates and donors who are helping year-round to support a culture of undergraduate research at the University of Alberta.
## Schedule at a Glance

*Note:* The information in this program was accurate at the time of publication, but is subject to change. *For the most up-to-date schedule and for links to each presentation, visit the FURCA website ([www.uab.ca/furca](http://www.uab.ca/furca)).* All events are free and open to the public.

### DAY 1: Tuesday, March 9, 2021

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>8:50 - 9:20 a.m.</td>
<td>30 min.  Networking 1</td>
</tr>
<tr>
<td>9:30 - 10:50 a.m.</td>
<td>80 min.  Natural Sciences &amp; Engineering 1A &amp; 1B</td>
</tr>
<tr>
<td>11:00 - 12:30 p.m.</td>
<td>90 min.  Health Sciences 1A &amp; 1B</td>
</tr>
<tr>
<td>12:30 - 1:20 p.m.</td>
<td>50 min.  Break</td>
</tr>
<tr>
<td>1:20 - 1:50 p.m.</td>
<td>30 min.  Mini-Workshop 1: How to spot potential “red flags” in published research</td>
</tr>
<tr>
<td>2:00 - 3:20 p.m.</td>
<td>80 min.  Social Sciences &amp; Humanities 1A, 1B, &amp; 1C</td>
</tr>
<tr>
<td>3:30 - 5:00 p.m.</td>
<td>90 min.  Interdisciplinary 1A &amp; 1B</td>
</tr>
<tr>
<td>5:30 - 6:30 p.m.</td>
<td>60 min.  Student journal “show &amp; tell”</td>
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### DAY 2: Wednesday, March 10, 2021

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>8:30 - 9:50 a.m.</td>
<td>80 min.  Social Sciences &amp; Humanities 2A &amp; 2B</td>
</tr>
<tr>
<td>10:00 - 10:30 a.m.</td>
<td>30 min.  Mini-Workshop 2: How to get the most out of your relationship with your research mentor or supervisor</td>
</tr>
<tr>
<td>10:40 - 12:00 p.m.</td>
<td>80 min.  Natural Sciences &amp; Engineering 2A &amp; 2B</td>
</tr>
<tr>
<td>12:05 - 12:50 p.m.</td>
<td>45 min.  Roundtable: Beyond academia: Leveraging undergraduate research experiences for diverse employment opportunities</td>
</tr>
<tr>
<td>1:00 - 2:20 p.m.</td>
<td>80 min.  Interdisciplinary 2A &amp; 2B</td>
</tr>
<tr>
<td>2:25 - 2:50 p.m.</td>
<td>25 min.  Networking 2</td>
</tr>
<tr>
<td>3:00 - 4:20 p.m.</td>
<td>80 min.  Health Sciences 2A &amp; 2B</td>
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</table>
## DAY 3: Thursday, March 11, 2021

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>8:50 - 9:20 a.m.</td>
<td>Networking 3</td>
</tr>
<tr>
<td>9:30 - 10:50 a.m.</td>
<td>Health Sciences 3A &amp; 3B</td>
</tr>
<tr>
<td>11:00 - 12:20 p.m.</td>
<td>Social Sciences &amp; Humanities 3A &amp; 3B</td>
</tr>
<tr>
<td>12:20 - 1:20 p.m.</td>
<td>Break</td>
</tr>
<tr>
<td>1:20 - 1:50 p.m.</td>
<td>Mini-Workshop 3: From passion to project — how to combine your interests in multiple disciplines into your ideal research experience</td>
</tr>
<tr>
<td>2:00 - 3:20 p.m.</td>
<td>Natural Sciences &amp; Engineering 3A &amp; 3B</td>
</tr>
<tr>
<td>3:20 - 6:00 p.m.</td>
<td>Break</td>
</tr>
<tr>
<td>6:00 - 7:30 p.m.</td>
<td>Virtual Awards Ceremony &amp; Keynotes</td>
</tr>
</tbody>
</table>
Detailed Schedule

For the most up-to-date schedule and for links to each presentation, visit the FURCA website (www.uab.ca/furca).

Presentations with the Sustainability Council logo have been identified by their authors as relating to sustainability.

An asterisk (*) beside author names indicates which authors are presenting.

DAY 1: Tuesday, March 9, 2021

Networking Session
Tuesday, March 9, 2021 | 8:50 AM - 9:20 AM

Need a break from research presentations? Want to connect with other students & FURCA attendees, or simply adore each other’s furry, fluffy (or leafy) “research assistants”? Our virtual networking sessions are intended to provide FURCA participants with a casual environment where you can chat, bond over similar experiences, share ideas and be inspired! No registration required - just drop in and say hello!

Natural Sciences & Engineering 1A
Tuesday, March 9, 2021 | 9:30 AM - 10:50 AM

77. Pandora’s Permafrost: Implications Of Paleontology In A Warming North
9:30 AM | Elric Jaime Cabote | Faculty of Science

54. Determining the Henry's Law Constant for Air Pollutants Emitted by Microbes
9:45 AM | Siti Hayati*, Shuang Wu, Ran Zhao | Faculty of Science

69. Chemistry Review and Analysis of Vaping Products and Respiratory Injury
10:00 AM | Chester Lau*, Ran Zhao, Dilini Vethanayagam | Faculty of Science

56. Hazard Assessment of Microcystins in Alberta’s Water Bodies
10:15 AM | Diane Mielewczzyk*, Chris Glover, Greg Goss, Gavin Saari | Faculty of Science

49. The acute, chronic and sub-lethal effects of galaxolide-musk contaminated sediment on Hyalella azteca, Chironomus dilutus, and Lumbriculus variegatus
10:30 AM | Deborah Aikins*, Tyler Mehler, Heather Veilleux, Yifeng Zhang, Greg Goss | Faculty of Science
Natural Sciences & Engineering 1B
Tuesday, March 9, 2021 | 9:30 AM - 10:50 AM

50. Physics of the Beirut Harbour Explosion
9:30 AM | Adam Czarnecki* | Faculty of Science

55. Computer model of global millennial scale climate oscillations
9:45 AM | Jan Czarnecki, Vadim A. Kravchinsky | Faculty of Science

58. Quantifying the Effect of Electric Fields on the Asymmetry of Soap Film Catenoids
10:00 AM | Samiha Ali*, Don Page | Faculty of Science

62. Cow Pee Power
10:15 AM | Vidhya Krishnan | Faculty of Science

74. Gravitational time dilation, free fall, and matter waves
10:30 AM | Anna P. Czarnecka, Andrzej Czarnecki | Faculty of Science

Health Sciences 1A
Tuesday, March 9, 2021 | 11:00 AM - 12:30 PM

6. An Integrative Review of Quality of Life Assessment Instrument Use in Dementia Care
11:00 AM | Iva Piplica*, Autumn Beemer*, Kara Schick-Makaroff | Faculty of Nursing

12. Surgical management of pediatric patients with drug-resistant epilepsy; comparison of pre-operative imaging and post-operative tissue diagnosis
11:15 AM | Jonas Szelewicki*, Barry Sinclair, Natarie Liu, Alexander Tamm, Janani Kassiri | Faculty of Medicine & Dentistry

15. Lifestyle management of urinary incontinence -- knowledge synthesis and translation through community partnership
11:30 AM | Marina Kirillovich*, Saima Rajabali, Adrian Wagg | Faculty of Science

20. Assessment of Adherence to Perioperative Anticoagulation Discontinuation Guidelines in Patients with Atrial Fibrillation and Stroke
11:45 AM | Mujtaba Siddique*, Nazeem Arsalan, Asif Butt, Ashfaq Shuaib | Faculty of Science
23. Sex Differences in Serum Polysialic Acid with Ageing
12:00 PM | Eileen Oficiar*, Lisa Willis | Faculty of Science

19. Military parents’ experiences of resilience enhancing training: A qualitative analysis
12:15 PM | Melina Lee*, Joanne Olson, Suzette Brémault-Phillips | Faculty of Nursing

Health Sciences 1B
Tuesday, March 9, 2021 | 11:00 AM - 12:20 PM

16. Nursing Students’ Awareness and Utilization of Educational and Professional Resources Towards Informatics Competency Development
11:00 AM | Kathryn Palamarek*, Joanna Trieu*, Danielle Lysak*, Manal Klieb (PhD, RN) | Faculty of Nursing

7. Sex and gut bacteria: the impact on natural ABO antibody production in mice
11:15 AM | Bushra Anjum*, Ibrahim Adam, Jean Pearcey, Kesheng Tao, Bruce Motyka and Lori J. West | Faculty of Science

9. Making sense of antisense therapy for spinal muscular atrophy
11:30 AM | Esra Erkut*, Tejal Aslesh, Rika Maruyama, Hong Moulton, Toshifumi Yokota | Faculty of Science

10. Understanding the Role of DDX1 Expression in Neuroblastoma Resistance to Treatment
11:45 AM | Jessica Bennett*, Lei Li, Jack Wang, Roseline Godbout | Faculty of Science

31. Accuracy of Fetal Echocardiograph in Diagnosing Congenital Heart Disease (CHD)
12:00 PM | Rose He*, Kim Haberer, Jayani Abeysekera, Aisling Young, Luke Eckersley, Angela McBrien, Isabella Adatia, Rashiv Sharma, Michelle Rushfeldt, Lisa K Hornberger | Faculty of Medicine & Dentistry

Mini-Workshop: How to spot potential “red flags” in published research
Tuesday, March 9, 2021 | 1:20 PM - 1:50 PM

As students and researchers, we rely on peer-reviewed research as a basis for much of our work. But does every journal claiming to be “peer-reviewed” have the same standards? What if something slips through the review process? In this mini-workshop, we’ll gain insight from a librarian about what to look for in a journal to ensure that it is rigorously reviewed, and how to recognize potential “red flags” in published research, even if it has been peer-reviewed.
Social Sciences & Humanities 1A
Tuesday, March 9, 2021 | 2:00 PM - 3:20 PM

99. Against the grain: Promoting identity continuity as a strategy to elevate group support for change
2:00 PM | Emma Monaghan*, Lily Syfers, & David E. Rast III | Faculty of Arts

103. How Does the Media Frame Homelessness During COVID-19?
2:15 PM | Sunny Preisler | Faculty of Arts

109. Intercultural Music in Media; Representations of Chinese Music History and Culture within Korra and Mulan
2:30 PM | Karen Vuong | Faculty of Arts

108. The Relationship between Types of Exercise and Risk for Eating Disorders in University Students
2:45 PM | Viktoria Wuest, Alexandra Munn, Thi Kim Truc Huynh | Faculty of Science

115. Is Uncertainty a Threat or a Challenge? Effects on Group Identification
3:00 PM | Jenna Blumhagen*, Kathryn Kincaid, David E. Rast, III | Faculty of Arts

Social Sciences & Humanities 1B
Tuesday, March 9, 2021 | 2:00 PM - 3:20 PM

84. Red pills and Punisher Skulls: Mainstream Popular Culture and the formation of Alt-right identity, ideology, and discourse
2:00 PM | Darren Choi | Faculty of Arts

102. Impact of Globalization on Populist Radical Right Parties
2:15 PM | Parul Singh Kanwar | Faculty of Arts

90. Patriarchal concept of Marriage between 1917-1921
2:30 PM | Josiah Kwabena Afriyie | Augustana Campus

83. The Culture of Law and Settler Colonialism in Canada
2:45 PM | Christian J. Zukowski | Faculty of Arts

94. Samosa Politics: Ethnicity, Incorporation and Multiculturalism in Canadian Politics
3:00 PM | Harnoor Kochar | Faculty of Arts
Social Sciences & Humanities 1C
Tuesday, March 9, 2021 | 2:00 PM - 3:20 PM

95. Word is Law: ‘Geis’ in Irish myth as masculinity discourse
2:00 PM  |  Liam Klick  |  Faculty of Arts

96. Unity through dance
2:15 PM  |  Shenin Mehnaj  |  Faculty of Agricultural, Life & Environmental Sciences

97. Novel, as in New: Fiction and Dreamscapes in Max Ernst’s La femme 100 têtes and Une semaine de bonté
2:30 PM  |  Madeleine Beaulieu  |  Faculty of Arts

100. Which gender is more likely to workout with a partner?
2:45 PM  |  Anne Musiwarwo  |  Faculty of Arts

106. Far From Home: 19th Century Exploration and Death in the Arctic
3:00 PM  |  Shelby Drozdowski*  |  Faculty of Arts

Interdisciplinary 1A
Tuesday, March 9, 2021 | 3:30 PM - 4:50 PM

45. Evaluating 40 years of bioaccumulation testing with Lumbriculus variegatus
3:30 PM  |  Shiying Yang, Greg G. Goss, W. Tyler Mehler  |  Faculty of Pharmacy & Pharmaceutical Sciences

3:45 PM  |  Nikki Gee*, Dr. Suresh Nayar  |  Faculty of Medicine & Dentistry

39. Effect of BrainDump Activities on Student Performance in Undergraduate Course
4:00 PM  |  Anjali Aggarwal*, Dr. Jennifer Passey  |  Faculty of Arts

34. What nutritional interventions exist for Canadian Indigenous Adults? A Scoping Review
4:15 PM  |  J. Zhang*, L. Frehich PhD Candidate, S. Wicklum MD CCFP FCFP  |  Faculty of Science

36. Working together: Perspectives of mental health care professionals on palliative care
4:30 PM  |  Tanya Park, Lydia Mutoni*, Ramya Sridhar*, Kathy Hegadoren, Bernadette Workun  |  Faculty of Nursing
Interdisciplinary 1B
Tuesday, March 9, 2021 | 3:30 PM - 5:00 PM

3. Probiotics as potential treatment for menopausal women experiencing vaginal health issues
3:30 PM | Aakanksha Kharel*, Meghan Sit, Sue Ross, Beate C Sydora | Faculty of Science

18. The influence of OSA severity on muscle sympathetic nerve activity: A systematic review and meta-analysis
3:45 PM | Lauren E Maier*, Brittany A Matenchuk, Ana Vucenovic, Margie H Davenport, Craig D Steinback | Faculty of Kinesiology, Sport, and Recreation

27. It’s not just about sex: the immune consequences of a pregnancy history in kidney patients awaiting transplantation
4:00 PM | Samina Rashiq*, Anne Halpin, Dr. Patricia Campbell, Dr. Esmé Dijke | Faculty of Science

38. Evaluation of the research evidence that suggests chunking improves memory
4:15 PM | Amir Shafaghat*, Jeremy B. Caplan | Faculty of Science

−1. Development of an Impedance-Based Biosensor, Enhancing the Point-of-Care Diagnostics in Colon Cancer Patients
4:30 PM | Dr. David Wishart, Dr. Yeganeh Khaniani, Dr. Scott MacKay, Payton LeBlanc* | Faculty of Science

24. Anti-VEGF therapy in radiation retinopathy secondary to uveal melanoma
4:45 PM | Ojas Srivastava*, Ezekiel Weis | Faculty of Medicine & Dentistry Interdisciplinary 1B

Student Journal “Show and Tell”
Tuesday, March 9, 2021 | 5:30 PM - 6:30 PM

Did you know that the University of Alberta is home to a wide range of student journals? Student journals not only provide a platform for publishing undergraduate research; they also provide opportunities for students to gain experience as editors and peer-reviewers, offering first-hand insight into the world of scholarly publishing. Join us for this informal “meet & greet” event with several of our student journals. Editors from each journal will introduce their journal, and discuss various opportunities for student involvement.
Social Sciences & Humanities 2A

Wednesday, March 10, 2021 | 8:30 AM - 9:50 AM

88. Predictors of present tense verb use in emotional autobiographical narratives
8:30 AM | Hunter Volk*, Samira Zabian*, Josiah Goetze*, and Elena Nicoladis | Faculty of Arts

80. Rapport: The Role of Language Choice in Establishing Common Ground in Bilinguals
8:45 AM | Avnit Dhanoa*, Elena Nicoladis | Faculty of Science

101. Language attitudes and perceptions: Evaluating identity among Francophone students
9:00 AM | Nicol G. Garzon*, Melissa Uwera, Sangué K. Coulibaly, Dr. Elena Nicoladis | Faculty of Arts

114. itwêmakan: Computational Semantic Methods in Plains Cree/nêhiyawêwin
9:15 AM | Daniel Benedict Dacanay, Antti Arppe | Faculty of Arts

98. Indigenous Language Revitalization (Cree)
9:30 AM | Maxine Desjarlais | Faculty of Education

Social Sciences & Humanities 2B

Wednesday, March 10, 2021 | 8:30 AM - 9:50 AM

81. Adaptation in adversity: Resilience and executive function in early childhood
8:30 AM | Aizle Bernardo*, Sandra Wiebe | Faculty of Science

82. A Combination-Approach to Active Learning: Impact of Group-Created Questions and Facilitated Discussion on Academic Performance and Feeling of Learning
8:45 AM | Shaina Corrick | Faculty of Science

91. Contributions of executive function to parenting
9:00 AM | Jenny Le*, Larissa Predy, Sandra A. Wiebe | Faculty of Science

111. The Mental Health Implications of Remote Learning
9:15 AM | Yasmine Abdel Razek*, Elena Nicoladis | Faculty of Arts

118. Evaluation in the Early Childhood Field
9:30 AM | Giulia Puinean*, Mischa Taylor, Rebecca Gokiert, Shelly Jun, Pieter de Vos | Faculty of Education
Mini-Workshop: How to get the most out of your relationship with your research mentor or supervisor

Wednesday, March 10, 2021 | 10:00 AM - 10:30 AM

One of the major benefits of undergraduate research is the opportunity to develop a lasting and meaningful relationship with your research supervisor or other mentors in your research group. At its best, having a strong mentoring relationship not only helps support your immediate research goals, but can also support your ongoing professional development. In this mini-workshop, we’ll discuss what you can do as a student to facilitate a good relationship with your mentors, and we’ll hear from experienced mentors about their experiences and strategies for making the most of your relationship with your research mentor.

Natural Sciences & Engineering 2A
 Wednesday, March 10, 2021 | 10:40 AM - 12:00 AM

65. Looking for the presence of Polysialic acid on T cell extracellular vesicles
10:40 AM | Pavithra Chempakanalloor | Faculty of Science

76. Bridging the Gap: Policy for Successful Forest Restoration in the Neotropics
10:55 AM | Megan Berg | Augustana Campus

71. Expanding the toolkit for the study of Polysialic acid: from genes and proteins to disease
11:10 AM | Samantha Rodriguez*, Lisa Willis | Faculty of Science

53. Bryophyte Communities in Quercus garryana Ecosystems on South East Vancouver Island: Preliminary Mesohabitat Assessment
11:25 AM | Daniel Tucker, Catherine La Farge | Faculty of Science

59. Synthesis of bicyclic peptides antagonist to Siglec 7/9 proteins
11:40 AM | Lena Sobze*, Jeffery Wong, Ratmir Derda | Campus Saint-Jean

Natural Sciences & Engineering 2B
 Wednesday, March 10, 2021 | 10:40 AM - 12:00 AM

68. Impact of CD36 Mutant K164Q on Fatty Acid Uptake
10:40 AM | Ramesh Mahdavifar*, Maria Febbraio, Julia Elizabeth Piché | Faculty of Science

57. Organization of forebrain-cerebellar pathways in birds
10:55 AM | Madison Pilon*, Cristian Gutierrez-Ibanez, Douglas R. Wylie | Faculty of Science

72. If Fish Could Talk: Pain, Research, and Zebrafish
11:10 AM | Ursula Dhillon* | Faculty of Science
60. Imagery Capability, Vividness of Imagery and Attitudes toward Wayfinding
11:25 AM | Yuwei Tan*, Felicitas E. Kluger, Jeremy J. Thomas, Jeremy B. Caplan | Faculty of Science

61. Growth Optimization and PHB Production of Methylocystis. sp strain Rockwell
11:40 AM | Liliana Van | Faculty of Science

**Roundtable Discussion: Beyond academia: Leveraging undergraduate research experiences for diverse employment opportunities**
Wednesday, March 10, 2021 | 12:05 PM - 12:50 PM

Many students assume that undergraduate research is primarily a stepping stone toward graduate or professional school, but research skills are an asset in a wide range of non-academic careers. How can we apply what we learn in academia to non-academic workplaces?

In this roundtable, we will hear from panelists working in a variety of sectors about how their research experiences supported their career development. We will then discuss ways that students can leverage their undergraduate research experiences to explore diverse career and employment opportunities.

**Interdisciplinary 2A**
Wednesday, March 10, 2021 | 1:00 PM - 2:20 PM

40. The Impact of Climate Change on North American Prairie Pothole Wetlands
1:00 PM | Brieanna Wallace | Faculty of Science

41. Crowdfunding Sustainable Development in Low- and Middle-Income Countries: Backing the Sustainable Designs of Today to Empower the World of Tomorrow
1:15 PM | Carlos Jarquin* | Faculty of Arts

78. A Seed of Hope: Building a Doomsday Archive on the Moon
1:30 PM | John Christy Johnson, Peter Anto Johnson, Svetozar Zirnov, Austin Mardon, Catherine Mardon, Riley Witiw, Gordon Zhou | Faculty of Medicine & Dentistry

117. Reconciling multiple perspectives: Indigenous consultation in sustainable development
1:45 PM | Jocelynn Proulx | Faculty of Arts

48. The Heart of Borneo: An insight into the islands complex sustainability issues
2:00 PM | Kaila Belovich | Faculty of Science
Interdisciplinary 2B
Wednesday, March 10, 2021 | 1:00 PM - 2:20 PM

116. Shyness and sarcasm use: Is there a stereotypical relationship?
1:00 PM | Megan Bohach* | Faculty of Arts

47. Sex and Colour: Alternative Morphology Male and Female Kribensis Cichlid
1:15 PM | Hasul Kim | Faculty of Science

44. Gender Bias in Urban Planning and Outcomes
1:30 PM | Sumayah Ghalab | Faculty of Arts

42. The preceding social factors that perpetuate diclofenac contamination in aquatic systems
1:45 PM | Madison Kinshella* | Campus Saint-Jean

46. Sustainability Education: An evaluation of current practices in educating middle and high school students about sustainability
2:00 PM | Danika Wack | Faculty of Agricultural, Life & Environmental Sciences

Networking Session
Wednesday, March 10, 2021 | 2:25 PM - 2:55 PM

Need a break from research presentations? Want to connect with other students & FURCA attendees, or simply adore each other’s furry, fluffy (or leafy) “research assistants”? Our virtual networking sessions are intended to provide FURCA participants with a casual environment where you can chat, bond over similar experiences, share ideas and be inspired! No registration required - just drop in and say hello!

Health Sciences 2A
Wednesday, March 10, 2021 | 3:00 PM - 4:30 PM

35. Curing Genetic Blindness with Gene Therapy: the Importance of the Immune System
3:00 PM | Kimberly Papp*, Geoff Casey, Dr. Ian MacDonald | Faculty of Medicine & Dentistry

8. Growth and stabilization of calyceal processes in the zebrafish eye
3:15 PM | Erica Chow*, Maria Sharkova, Jennifer Hocking | Faculty of Science

13. Using the zebrafish model to characterize retinal morphology and function in KCNV2 Retinopathy
3:30 PM | JuliAnn Thai*, Karen Attia*, Nate Nadolski, Jennifer Hocking | Faculty of Science
14. Investigating the Role of Capicua Protein in T-Cell Development
3:45 PM | Eberts K and Baldwin TA | Faculty of Science

25. Studying cell-cell interactions between neurons and brain progenitor cells to discover novel pro-regenerative molecules
4:00 PM | Pouria Torabi*, Nicole Dittmann, Anastassia Voronova | Faculty of Science

Health Sciences 2B
Wednesday, March 10, 2021 | 3:00 PM - 4:20 PM

5. Evaluation of six enzyme immunoassay (EIAs) and point-of-care systems (POCTs) for detection of SARS-CoV-2 antibodies in serum stratified by days post symptom onset and storage temperature
3:00 PM | Ashley Bailey*, Jamil Kanji, LeeAnn Turnbull, Carmen Charlton | Faculty of Medicine & Dentistry

37. Evaluating the potency of dipeptide inhibitors against the main protease of SARS-CoV-2 using FRET-based assays
3:15 PM | Sardeev Bajwa*, Elena Arutyunova, John C. Vederas, Dr. James Nieman, Dr. Lorne Tyrrell, M. Joanne Lemieux | Faculty of Science

43. An exploration of food sovereignty’s history, presence, and future in Canada
3:30 PM | Adam Purificati-Fune* | Faculty of Agricultural, Life & Environmental Sciences

73. Analyses of the antimicrobial and physical properties of gold and silver alloy thin films and their aqueous solutions for COVID-19 therapeutic applications
3:45 PM | Willow Dew*, Robert Burrell | Faculty of Engineering

113. Change in the Seasonality of Births in Canada, 1991-2019
4:00 PM | Olivia Curran-Morton* | Faculty of Arts
Networking Session
Thursday, March 11, 2021 | 8:50 AM - 9:20 AM

Need a break from research presentations? Want to connect with other students & FURCA attendees, or simply adore each other’s furry, fluffy (or leafy) “research assistants”? Our virtual networking sessions are intended to provide FURCA participants with a casual environment where you can chat, bond over similar experiences, share ideas and be inspired! No registration required - just drop in and say hello!

Health Sciences 3A
Thursday, March 11, 2021 | 9:30 AM - 10:50 AM

4. Prevention of Cerebral Palsy During the Prenatal Period
9:30 AM | Sarah Almas, Oriana Shaw, Jerome Yager | Faculty of Medicine & Dentistry

29. Analysis of the role of Merlin in the developing nervous system
9:45 AM | Vaishvi Patel*, Sarah Hughes | Faculty of Medicine & Dentistry

11. Life With Diabetes
10:00 AM | Jessica Gonzalez | Faculty of Nursing

33. The Role of Electronic Personal Health Records and Patient Portals in the Management of Chronic Respiratory Conditions: a Scoping Review
10:15 AM | Ariadna Rolo Codorniu*, Jenna Macklin*, Albina Karpman, Olga Petrovskaya | Faculty of Nursing

26. Acute concussion vs post-concussion syndrome: How can we prevent progression?
10:30 AM | Sheharzad Mahmood*, Ann-Marie Przyslupski, Teresa DeFreitas, Martin Mrazik, Constance Lebrun. | Faculty of Medicine & Dentistry
**Health Sciences 3B**

Thursday, March 11, 2021 | 9:30 AM - 10:50 AM

22. The matrix metalloproteinase 14 (MMP14) is required for periodontal ligament homeostasis
9:30 AM | Saad Nizamani*, Haiming Lin, Maria Alexiou, Xiaodan Xia, Dawei Zhang, and Daniel Graf. | Faculty of Science

28. Mapping Cerebral Texture Abnormalities in ALS using FLAIR: A Longitudinal Multicenter Study
9:45 AM | Andrew Wu*, Daniel Ta, Adam Elamy, Pedram Parnianpour, Lawrence Korngut, Angela Genge, Lorne Zinman, Annie Dionne, Michael Benatar, Robert Welsh, Sanjay Kalra | Faculty of Science

30. Distinguishing CWD prion strains using immunohistochemistry in mice
10:00 AM | M. Wait, E. Funk, A. Otero, C. Duque Velasquez, J. Aiken, D. McKenzie | Faculty of Science

32. The Neuroregenerative Effects of Intraspinal Microstimulation Following Spinal Cord Injury
10:15 AM | Andy Lee*, Mason Schindle, Neil Tyreman, and Vivian K. Mushahwar | Faculty of Science

119. The Therapeutic Potential of the Hepatokine Tsukushi
10:30 AM | Mya Schmidt*, Mourad Ferdaoussi, Zaid Almaayah, Shingo Takahara, Shubham Soni, Jason Dyck | Faculty of Science

**Social Sciences & Humanities 3A**

Thursday, March 11, 2021 | 11:00 AM - 12:20 PM

79. Designing Sustainable Funerary Practices: a Multi-Species Perspective
11:00 AM | Ziwei Huang | Faculty of Arts

93. COVID-19 Impacts on interpretive programming in Alberta’s provincial parks in the summer of 2020.
11:15 AM | Kate Corrigan*, Glen Hvenegaard | Augustana Campus

105. From 1 to 2 Million - Sustainable Urban Densification in Edmonton
11:30 AM | Saffron Newton | Faculty of Arts

107. Global Implications of Fresh Water Shortage
12:00 PM | Suraj Girish | Faculty of Arts
Social Sciences & Humanities 3B
Thursday, March 11, 2021 | 11:00 AM - 12:20 PM

104. The Effects of Acculturation on Gender Ideology in South Asian-Canadians
11:00 AM | Ramanjot K. Kalher & Kimberly A. Noels | Faculty of Arts

85. Intergenerational Differences in Loneliness: Comparing Generation X and Generation Z
11:15 AM | Emily Young*, Hunter Volk*, Bikalpa Koirala*, Peyton Northcott*, Nicol Garzon* | Faculty of Arts

86. Reconciling Islam with Queerness in Fiction
11:30 AM | Suwaibah Gangat | Faculty of Arts

87. Ethnicity-based victimization, internalizing problems, and school ethnic diversity
11:45 AM | Hiba Khan*, Brenna Zatto, Wendy L.G. Hoglund | Faculty of Arts

89. Can Negative Emotions Be Used as a Driving Force Towards Personal Growth?
12:00 PM | Iman Farooqi*, Dr. Kyle Nash | Faculty of Science

Mini-Workshop: From passion to project — how to combine your interests in multiple disciplines into your ideal research experience
Thursday, March 11, 2021 | 1:20 PM - 1:50 PM

Have you ever wondered how you can combine your interests in two different areas into one cohesive and cool research project? In this mini-workshop, we’ll discuss some of the benefits and challenges of interdisciplinary undergraduate research, and hear from researchers who have leveraged their interests in multiple areas to do unique, interdisciplinary research projects. We’ll also discuss tips for how to get started with your own interdisciplinary project — from finding a supervisor (or co-supervisors!) to finding funding to support your work.

Natural Sciences & Engineering 3A
Thursday, March 11, 2021 | 2:00 PM - 3:20 PM

70. Lessons learned from Earth: ethical preservation and sustainable utilization of resources on Mars - a narrative review
2:00 PM | Peter Anto Johnson*, John Christy Johnson, Gordon Zhou, Austin Mardon | Faculty of Medicine & Dentistry

75. Opening the Door to Technology!
2:15 PM | Arnold Gihozo | Augustana Campus
2. Linked List Visualization Tool  
2:30 PM | Harshil Vyas | Augustana Campus

52. Natural Grassland Preservation in the Canadian Prairies
2:45 PM | Courtney Graham* | Faculty of Arts

63. Analysis of the Genetic Structure of a Snail Symbiont, Across Spatial & Species Divides
3:00 PM | Robert X. Lu, Brooke McPhail, Patrick C. Hanington, Heather C. Proctor | Faculty of Science

Natural Sciences & Engineering 3B
Thursday, March 11, 2021 | 2:00 PM - 3:20 PM

51. Identification of Brassica resistance resources against Plasmodiophora brassicae pathotypes 3H and 3D
2:00 PM | Damanveer Bhogal*, Dr. Rudolph Fredua-Agyeman, Dr. Sheau-Fang Hwang, Dr. Stephen Strelkov | Faculty of Science

64. The Effects of Cancer Treatments on Immune Activation due to DNA Leakage from Cellular Compartments in Colorectal Cancer
2:15 PM | Angie Chen*, Shayla Mosley, Courtney Mowat, and Kristi Baker | Faculty of Science

66. Role of Intestinal De Novo Phosphatidylcholine Synthesis in Lipid Metabolism
2:30 PM | Hailey Fedoruk*, Stephanie Carlin, John Kennelly, Ariel Quiroga, Kelly-Ann Leonard, Randal Nelson, Richard Lehner, and René Jacobs | Faculty of Agricultural, Life & Environmental Sciences

67. Avoiding Ice Damage in High Throughput Cryopreservation of Cells
2:45 PM | Parth K. Patel*, Nishaka William, Jason P. Acker | Faculty of Science

112. Simulating T2 Relaxation Times of Functional Tongue Segments through Biomechanical Modelling
3:00 PM | Natalie Hanas*, Noor Al-Zanoon, Dr. Daniel Aalto | Faculty of Science
Keynotes and Awards Ceremony
Thursday, March 11, 2021 | 6:00 PM - 7:30 PM

Join us for our closing celebration and awards ceremony, where we will recognize some of the outstanding researchers we have heard from throughout the week. This year, we are pleased to welcome the following keynote speakers, each of whom will be speaking on their experience and insights on research adaptation & interdisciplinary in the time of COVID-19:

- Dr. Michelle Maroto (Department of Sociology)
- Dr. Sean Caulfield (Department of Art & Design)
- Dr. Patrick McLane (Department of Emergency Medicine)

Following the brief keynote addresses, the awards program will follow.

FURCA Presenter Awards
All FURCA presentations are evaluated by volunteer judges. Scores are compiled, and top-ranking presentations in each category are selected by staff from the University of Alberta Library. Each award has a value of $250.

**Outstanding Communication:** Recognizes students who are best able to communicate the results and impact of their research to an interdisciplinary audience. *Sponsored by the Students’ Union & Faculty of Science*

**Outstanding Interdisciplinary Research:** Recognizes outstanding interdisciplinary research. Students must be able to clearly explain the interdisciplinary aspects of their project to the judges. *Sponsored by the Faculty of Science.*

**Outstanding Creative Activity:** Recognizes outstanding research in an artistic discipline, which includes one or a combination of: design, creative writing, visual arts (painting, drawing, sculpture, ceramics, textiles), performing arts (dance, music, theatre), film, video, interdisciplinary arts, media and electronic arts, and new artistic practices. *Sponsored by the Faculty of Arts.*

**Outstanding “Early Career” Research:** Recognizes a 1st or 2nd year student for outstanding research undertaken during his or her first year of study. (Note: First year students presenting work completed in high school are also eligible for this award). *Sponsored by the Students’ Union.*

**Outstanding International Research:** Recognizes outstanding research performed outside of Canada (e.g. international field work, research-abroad experiences, etc.), or as part of a virtual exchange program or internship with an institution based outside of Canada. *Sponsored by University of Alberta International.*

**Outstanding International Student Researcher:** Recognizes outstanding research performed by an international student at the U of A. *Sponsored by University of Alberta International.*

**Outstanding Sustainability Research Award:** The Sustainability Council is proud to recognize the top undergraduate researchers who are building a better world. The winning projects demonstrate an integrated approach that considers human and environmental factors in the challenges we face and the solutions we need. A panel convened by the Sustainability Council selects the top projects within this field for the award. *Sponsored by the Sustainability Council.*
URI Mentorship Awards:
Each year, a team of volunteers from the Undergraduate Research Initiative coordinate the U of A Awards for Outstanding Mentorship in Undergraduate Research & Creative Activities. These student-nominated, student-adjudicated awards recognize faculty, graduate students, post-doctoral fellows, and research staff who go above and beyond to support students in their undergraduate research.

Mentor Award recipients will be announced and recognized during the FURCA awards program.