

# Kewalin Samart

COMPUTATIONAL BIOLOGY · METHOD DEVELOPMENT · MACHINE LEARNING · HOST-DIRECTED DRUG REPURPOSING ·

Anschutz Health Sciences Building, 1890 N Revere Ct, Aurora, CO 80045; JRavi Lab: Rm P12-6290, Krishnan Lab: Rm P12-7086

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## Education

### University of Colorado Denver, Anschutz Medical Campus (CU Anschutz)

Aurora, Colorado

DOCTOR OF PHILOSOPHY IN COMPUTATIONAL BIOSCIENCE

Aug 2022 – present

- Thesis Advisors: Dr. Arjun Krishnan, and Dr. Janani Ravi (co-primary)
- C. Werner and Kitty Hirs Fellowship
- Coursework: Methods and Tools in Biomedical Informatics, Research Methods in Biomedical Informatics, Machine Learning with Biomedical Applications, Statistics for Basic Sciences

### Michigan State University (MSU)

East Lansing, Michigan

B.Sc. IN COMPUTATIONAL MATHEMATICS; MINOR IN COMPUTATIONAL MATH, SCIENCE, AND ENGINEERING

May 2022

- High Honor (Summa Cum Laude)
- McCartney Math Award, L.C. Plant Math Award, College of Natural Science Scholar
- Cumulative GPA: 3.98/4.00; Major GPA: 4.00/4.00
- Dean's Honor List: Fall 2018 – Spring 2022
- Royal Thai Government Scholarship Recipient 2017

## Skills

**Programming Languages** R, Python, C++, TeX

**Computational Tools** Git, vi, Terminal, Unix/Linux, High-performance/ Cluster computing, LaTeX

## Publications

- **Kewalin Samart**<sup>\*\*</sup>, Phoebe Tuyishime<sup>\*\*</sup>, Arjun Krishnan<sup>\*</sup>, Janani Ravi<sup>\*</sup>. Reconciling multiple connectivity scores for drug repurposing. *Briefings in Bioinformatics*(2021) doi.org/10.1093/bib/bbab161.  
GitHub: [github.com/jravidlab/connectivity\\_scores](https://github.com/jravidlab/connectivity_scores); Live doc: [jravidlab.github.io/connectivity\\_scores](https://jravidlab.github.io/connectivity_scores)
  - Janani Ravi<sup>\*</sup>, **Kewalin Samart**, Jason Zwolak. Modeling the START transition in the budding yeast cell cycle. *bioRxiv*(2023) doi.org/10.1101/2023.11.05.564806; Online simulator: <http://sbmlsimulator.org/simulator/by-start>. *Under review at PLOS Computational Biology*.
  - **Kewalin Samart**, Amy Tonielli, Arjun Krishnan, Janani Ravi. Integrating multiple transcriptome-based methods for drug repurposing in tuberculosis. *In preparation*.
- <sup>\*\*</sup>co-primary authors; <sup>\*</sup>corresponding authors.

## Presentations

### Research/Technical Talks

- R workshop at Global Alliance for Rapid Diagnostics (GARD). Virtual, Mar. 21, 2023. Presentation material: [github.com/jananiravi/R\\_intro](https://github.com/jananiravi/R_intro)
- 2nd Latin American Congress of Women in Bioinformatics and Data Science (WBDS LA). Virtual, Sep. 23, 2021.
- 29th Conference on Intelligent Systems for Molecular Biology and the 20th European Conference on Computational Biology (ISMB/ECCB). Virtual, Jul. 25, 2021.
- R-Ladies Pune. Virtual, May. 9, 2021. Presentation material: [github.com/KewalinSamart/Rladies-lightning-talk-distill](https://github.com/KewalinSamart/Rladies-lightning-talk-distill)

### Poster Presentations

- 2023 Genome Informatics Conference. Cold Spring Harbor Laboratory, Woodbury, NY, Dec. 6–9, 2023.
- 2023 Department of Biomedical Informatics Annual Retreat. CU Anschutz, Aurora, CO, Aug. 29, 2023.
- Colorado Immunology and Microbiology conference. Vail, CO, Sep. 24 – 26, 2022.
- Intelligent Systems for Molecular Biology, ISMB 2022, International Society for Computational Biology flagship conference. Virtual, Jul. 11 – 12, 2022. <https://www.overleaf.com/project/60dffcf32f1f0ce5dbe33b11>
- 2nd Latin American Congress of Women in Bioinformatics and Data Science (WBDS LA). Virtual, Sep. 22 – 24, 2021.
- 2021 Mid-Michigan Symposium for Undergraduate Research Experiences (Mid-SURE). Virtual, Jul. 28, 2021.
- 29th Conference on Intelligent Systems for Molecular Biology and the 20th European Conference on Computational Biology (ISMB/ECCB). Virtual, Jul. 25 – 30, 2021.
- 2021 Great Lakes Bioinformatics Conference (GLBIO). Virtual, May 10 – 13, 2021.
- 2021 University Undergraduate Research and Arts Forum (UURAF). Virtual, Apr. 15 – 19, 2021.
- 2020 Mid-Michigan Symposium for Undergraduate Research Experiences (Mid-SURE). Virtual, Aug. 10, 2020.

### Podcast Interview

- Repurposing drugs for diseases. The Sci-Files on Impact 89FM Episode 11 Season 6, Aug. 1, 2021.  
Podcast: <https://impact89fm.org/101365/podcasts/the-sci-files-08-01-2021-kewalin-samart-repurposing-drugs-for-diseases/>

## Peer Review

**Academic Journals** Contributed to peer review at PLOS ONE, Bioinformatics

## Honors/ Awards/ Scholarships

Aug 2022	<b>C. Werner and Kitty Hirs Fellowship</b> , University of Colorado Denver, Graduate School	Aurora, CO
May 2022	<b>High Honor (Summa Cum Laude)</b> , Michigan State University	East Lansing, MI
Apr 2022	<b>McCartney Mathematics Award</b> , MSU Department of Mathematics	East Lansing, MI
Oct 2021	<b>Fall 2021 CNS Undergraduate Research Scholarship</b> , MSU College of Natural Science	East Lansing, MI
May 2021	<b>Summer Research Scholarship</b> , EnSURE program – MSU College of Engineering	East Lansing, MI
Jan 2021	<b>Spring 2021 CNS Undergraduate Research Scholarship</b> , MSU College of Natural Science	East Lansing, MI
Oct 2020	<b>Fall 2020 CNS Undergraduate Research Scholarship</b> , MSU College of Natural Science	East Lansing, MI
May 2020	<b>Summer 2020 CNS Undergraduate Research Scholarship</b> , MSU College of Natural Science	East Lansing, MI
Apr 2020	<b>L.C. Plant Mathematics Award Scholarship</b> , MSU Department of Mathematics	East Lansing, MI
Jan 2020	<b>Spring 2020 CNS Undergraduate Research Scholarship</b> , MSU College of Natural Science	East Lansing, MI
Mar 2018	<b>Academic Excellence Award (High Honor)</b> , Lawrence Academy	Groton, MA
Dec 2017	<b>Academic Excellence Award (Honor)</b> , Lawrence Academy	Groton, MA
May 2017	<b>Full-Ride Scholarship</b> , BIOTEC, Royal Thai Government	Bangkok, Thailand

## Research Experience

**JRavi and Krishnan Labs; PIs: Dr. Janani Ravi and Dr. Arjun Krishnan** *Jul 2023 – present*

DEPARTMENT OF BIOMEDICAL INFORMATICS, CU ANSCHUTZ *Aurora, CO*

- Graduate researcher
- Current projects:
  - (i) Integrating multiple transcriptome-based methods for drug repurposing in tuberculosis. [NIH R35 GM128765]
  - (ii) “TB or not TB” A data-driven approach to infer molecular signature of Mycobacterium tuberculosis infection in human.
  - (iii) Mechanism-guided drug repurposing for host-directed therapy of infectious diseases using interpretable and integrative ML. [NIH R21 AI169301]

**Zhang Lab; PI: Dr. Fan Zhang** *Mar 2023 – May 2023*

DEPARTMENT OF BIOMEDICAL INFORMATICS, CU ANSCHUTZ *Aurora, CO*

- PhD rotation student
- Project: Predicting drug response pathway-driven cell phenotypes in Rheumatoid arthritis using large single-cell transcriptomics.

**Kechris Lab; PI: Dr. Katerina Kechris** *Jan 2023 – Mar 2023*

DEPARTMENT OF BIOSTATISTICS AND INFORMATICS, CU ANSCHUTZ *Aurora, CO*

- PhD rotation student
- Project: Identification of enriched pathways associated with multiple Chronic Obstructive Pulmonary Disease phenotypes.

**Krishnan Lab; PI Dr. Arjun Krishnan** *Mar 2021 – May 2022*

MSU DEPARTMENT OF COMPUTATIONAL MATHEMATICS, SCIENCE, AND ENGINEERING *East Lansing, MI*

- Undergraduate researcher in computational biology
- Research focus: methods and applications of transcriptome-based drug repurposing.

**JRavi Lab; PI: Dr. Janani Ravi** *Dec 2019 – May 2022*

MSU DEPARTMENT OF PATHOBIOLOGY AND DIAGNOSTIC INVESTIGATION *East Lansing, MI*

- Undergraduate researcher in computational biology
- Research focus: methods and applications of transcriptome-based drug repurposing and mathematical modeling.

## Teaching Experience

**CPBS 7712: Research Methods in Biomedical Informatics** *Jan 2024 – May 2024*

COMPUTATIONAL BIOSCIENCE PROGRAM, CU ANSCHUTZ *Aurora, CO*

Education assistant

**CMSE 202: Computational Modeling and Data Analysis II** *Jan 2022 – Apr 2022*

MSU DEPARTMENT OF COMPUTATIONAL MATHEMATICS, SCIENCE, AND ENGINEERING *East Lansing, MI*

Undergraduate learning assistant (LA) with Dr. Luciano Silvestri

## Peer Mentees

**Undergraduates** Landon Buskirk (Oct’23–), Amy Tonielli (2022)

## University Service/ Leadership

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### Committee Member

COMPUTATIONAL BIOSCIENCE (CPBS) SEMINAR COMMITTEE

Aurora, CO

2023-2024 Academic Year

- Plan and coordinate recurring seminars for the CPBS graduate program.

### Co-organizer

R-LADIES AURORA

Aurora, CO

August 2023–present

- Plan and organize events for R-Ladies Aurora.

### Committee Member

COMPUTATIONAL BIOSCIENCE PROGRAM RETREAT

Aurora, CO

2022-2023 Academic Year

- Planned and organized the annual retreat for the Computational Bioscience graduate program.

### Committee Member

A REPRESENTATIVE ON BEHALF OF MSU COLLEGE OF NATURAL SCIENCE FOR

East Lansing, MI

2021-2022 Academic Year

- the University Academic Grievance Hearing Board
- the University Academic Integrity Hearing Board
- the University Academic Appeal Board

## Extracurricular/ Volunteer Activities

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Jul 2023 **2023 Summer Academy, SACNAS at CU Anschutz**, Helped set up program activities

Aurora, CO

Jul 2021 **useR! 2021 The R Conference**, MaRmot; Helped provide program information to participants

Virtual

2021– **Association for Women in Mathematics (AWM)**, Member

Providence, RI

2021–2022 **MSU Women in STEM**, Member

East Lansing, MI

2020–2022 **Women + Data Science**, Member

East Lansing, MI

2019–2022 **R-Ladies East Lansing**, Member

East Lansing, MI

2018–2022 **MSU Thai Student Association (ThaiSA)**, Member

East Lansing, MI

Jul 2018 **Burirum Pitthayakhom School**, Assisted in the educational guidance seminar for K-12 students

Burirum, Thailand

Mar 2018 **The Arc of Opportunity in North Central Massachusetts**, Cared for people with disabilities

Fitchburg, MA

2017–2018 **Math Club**, Member

Groton, MA

2017–2018 **Stage Crews**, Member; 6 hours/week working and learning art and technician skills for stage plays

Groton, MA

2017–2018 **LA Singers (High School Choir)**, Member; Soprano

Groton, MA

Nov 2017 **Rise Against Hungers**, Assisted in cooking foods/desserts and organized fundraising tables

Groton, MA