

# Arvin Zaker

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## SKILLS

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- **Programming languages:** R, Python, Bash, Nix
- **Software:** ImageJ, Imiris, Microsoft Office Suite
- **Bioinformatic skills:** Transcriptomic & genomic analysis, data visualization, machine learning, pipeline development
- **Operating systems:** Linux, Windows
- **Lab techniques:** phage extraction and amplification, fluorescent imaging, electrophysiological recordings

## WORK EXPERIENCE

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### Tutor

*Oxford Learning Center*

Sep 2023 - Present

*Richmond Hill, ON*

- Provide personalized tutoring to students from Kindergarten to University.
- Efficiently managing multiple students' learning plans to encourage growth and success.
- Fostering trust and open communication to collaboratively set and achieve academic goals.
- Implement strategies to promote critical thinking and problem-solving skills.

### Bioinformatics Researcher

*University of Ottawa*

Sep 2022 - Present

*Ottawa, ON*

- Creating computation tools for analyzing cancer drug response
- Developing novel *in vivo* drug response quantification metrics
- Correlational study between cancer gene biomarkers and drug response
- Creating machine learning models to translate *in vivo* results to clinical practice
- Open source package development and developing analysis pipelines

### Patient Care Coordinator & Receptionist

*Chadha Medical Clinic*

Sep 2022 - June 2023

*Ottawa, ON*

- Assisted with appointment scheduling, referrals, and testing coordination to 30+ patients weekly
- Collaborated with the medical team and to address patients' unique needs and backgrounds.
- Ensuring timely follow-ups and patient satisfaction in a fast-paced environment

### Undergraduate Trainee - Laboratory rotations & TST program

*University of Ottawa*

Jan 2022 - Aug 2022

*Ottawa, ON*

- Utilized the R programming language in genomic and transcriptomic data analysis
- Cancer phenotype and survival analysis of novel DNA repair complexes
- Data extraction and processing from Pan-cancer databases
- Utilizing text mining algorithms for biomarker discovery

### Undergraduate Trainee - SEA-PHAGES program

*University of Ottawa*

Sep 2021 - Apr 2022

*Ottawa, ON*

- Performed environmental sampling and phage extraction techniques
- Performed DNA extraction and genomic analysis via gel electrophoresis
- Used Python and ImageJ to analyze the restriction digest pattern of phages
- Phage discovery and characterization (Arzan and Khorshid)

### Research Assistant - UROP program

*University of Ottawa*

Nov 2020 - Jul 2022

*Ottawa, ON*

- Designing experiments and setting up research equipment for data collection
- Performing experiments on mouse muscles using electrophysiological equipment
- Performing antibody staining, fluorescent imaging, and analysis of muscle tissue in the Imiris program

### Sales & Stock Coordinator

*Scope Charity Shop & Tenovus Cancer Care Charity Shop*

Sep 2018 - Jun 2019

*Cardiff, UK*

- Collaborated with teams across two charity shops
- Managed sales, customer service, and donation tracking
- Assisted in developing marketing campaigns and sales events for store promotion

## VOLUNTEER EXPERIENCE

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<b>Lets Talk Science Presenter</b> <i>University of Ottawa</i>	Jan 2021 - Dec 2021 <i>Ottawa, ON</i>
<b>Founder of the University of Ottawa Canadians Sharing Locally and Globally</b> <i>University of Ottawa Canadians Sharing Locally and Globally</i>	Dec 2020 - Apr 2023 <i>Ottawa, ON</i>
<b>Coordinator &amp; Co-Chair at Best Buddies club</b> <i>Best Buddies club</i>	Sep 2020 - Sept 2023 <i>Ottawa, ON</i>
<b>Founder and Coordinator of Hands on Health Magazine</b> <i>Interprofessional Health Association (IPHA) club</i>	Jun 2020 - Present <i>Ottawa, ON</i>
<b>Family Visitor and Program Assistant</b> <i>Garry J Armstrong Long Term Care Centre</i>	Feb 2020 - May 2020 <i>Ottawa, ON</i>
<b>Childcare work experience</b> <i>Cylch Meithrin Trelai Child Care Center</i>	Apr 2019 <i>Cardiff, UK</i>
<b>Fundraising event participant</b> <i>Allameh Helli 3 High School</i>	Jan 2016 <i>Tehran, IR</i>

## EDUCATION

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<b>University of Ottawa</b> <i>Honours Bachelor of Science (H.BSc) in Translational and Molecular Medicine (CGPA: 9.98/10)</i>	Sep 2019 - Apr 2023 <i>Ottawa, ON</i>
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## PUBLICATIONS & PRESENTATIONS

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Roy S., **Zaker, A.**, Mer, A., D'Amours, D. (2023). Large-scale phenogenomic analysis of human cancers uncovers frequent alterations affecting SMC5/6 complex components in breast cancer, *NAR Cancer*, 5(3). DOI: 10.1093/narcan/zcad047.

Wu, G., **Zaker, A.**, Ebrahimi, A., Tripathi, S. & Mer, A. S. Text-mining-based feature selection for anticancer drug response prediction. *Bioinformatics Advances* 4, vbae047 (2024). DOI 10.1093/bioadv/vbae047

Roy, S., **Zaker, A.**, Mer, A., D'Amours, D. (2023). Large-scale phenogenomic analysis of human cancers uncovers frequent alterations affecting SMC5/6 complex components. *Canadian Society for Molecular Biosciences (CSMB) International Conference*. Ottawa, ON.

**Zaker, A.**, Mer, A. (2022). Comparative analysis of drug response metrics in patient-derived xenografts. *4th Annual Faculty of Medicine Research Day*. Ottawa, ON.

Friesen, R., Algharbi S., **Zaker, A.**, Mahdi, O., Gao, R., Ferri, O., et al. (2022). Investigating Nucleotide-binding Proteins in Bacteriophage JohnDoe. *SEA Symposium*. University of Pittsburgh, Pittsburgh, PA.

Featherstone, A., Radar, A., Salama, A., Tiukuvaara, S., Ferri, O., **Zaker, A.**, et al. (2022). Give Us a Millet of Your Time: Dehusking the Singleton Bacteriophage Arzan. *SEA Symposium*. University of Pittsburgh, Pittsburgh, PA.

**Zaker, A.**, McRae, C., Renaud, J.M. (2021). Role of Adenosine Receptors on mice skeletal muscle fatigue kinetics. *UROP symposium*. University of Ottawa, Ottawa, ON.

## AWARDS & ACHIEVEMENTS

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<b>CPR level C</b>	July 2023
<b>NSERC - Undergraduate Student Research Awards (USRA) (\$7500)</b>	May 2023 - Aug 2023
<b>TMM Summer Training &amp; Work in Biomedical Research Scholarship (\$8200)</b>	May 2022 - Aug 2022
<b>UROP Scholarship, University of Ottawa (\$1000)</b>	Dec 2020 - Apr 2021
<b>Dean's Honour List &amp; Merit Scholarship, University of Ottawa (\$1000 per term)</b>	Sep 2019 - Present
<b>Admission Scholarship, University of Ottawa (\$3000)</b>	Sep 2019 - Apr 2020
<b>Academic Excellence Scholarship, Cardiff Sixth Form College (\$14000)</b>	Sep 2018 - Jun 2019