

# JOY NYAANGA

Chicago, IL | (716) 908-4355 | [jnyaan@gmail.com](mailto:jnyaan@gmail.com) | <https://joynyaanga.netlify.app>

## EDUCATION

<b>Ph.D.</b>	<b>Northwestern University</b> – Evanston, IL <i>Quantitative Biology</i>	<b>Expected 2022</b>
<b>M.A.</b>	<b>Princeton University</b> – Princeton, NJ <i>Molecular Biology</i>	<b>2017 - 2018</b>
<b>B.S.</b>	<b>John Carroll University</b> – University Heights, OH <i>Double Major: Biochemistry; Cell and Molecular Biology</i>	<b>2013 - 2017</b>

## SKILLS

**Computing:** R, GitHub, Python, bash

**Data science:** data analysis, data mining, visualization, dashboarding

**Statistics:** regression models, maximum likelihood, gaussian mixture modeling, model selection

## RELEVANT RESEARCH AND PROJECTS

<b>Ph.D. Candidate   Northwestern University</b>	<b>2018 - Present</b>
<ul style="list-style-type: none"><li>Investigate the genetic variation underlying differences in developmental growth using <i>Caenorhabditis elegans</i> to decipher how organisms control growth rate and developmental timing</li><li>Design and optimize a high-throughput experimental platform for the acquisition of developmental traits</li><li>Collaborate with mathematicians to build mechanistic models to explore complex growth relationships</li><li>Develop and implement an R package to facilitate handling and visualization of image-based data</li><li>Mentor and train six undergraduate and high school students on independent computational research projects</li></ul>	
<b>Computational Biology/Data Science Intern   Celsius Therapeutics</b>	<b>Summer 2021</b>
<ul style="list-style-type: none"><li>Evaluated and implemented lineage reconstruction and trajectory analysis methods in single-cell RNAseq data</li></ul>	
<b>Masters Student   Princeton University</b>	<b>2017 - 2018</b>
<ul style="list-style-type: none"><li>Probed RNA-protein interactions regulated by 8-oxoG to uncover cellular changes caused by oxidative stress</li><li>Modeled biochemical reactions in Python to study the dynamics of protein networks</li></ul>	
<b>Summer Research Student   Cleveland Clinic</b>	<b>Summer 2016</b>
<ul style="list-style-type: none"><li>Computationally identified mutations that altered N-glycosylation in factor VIII, a procoagulant protein</li><li>Constructed plasmids containing mutations of interest</li></ul>	
<b>Undergraduate Researcher   John Carroll University</b>	<b>2015 - 2016</b>
<ul style="list-style-type: none"><li>Studied lipid peroxidation of linoleic acid using gas chromatography – mass spectrometry</li><li>Presented results in a university poster competition (awarded special merit)</li></ul>	

## PUBLICATIONS

*Peer-reviewed:*

**Nyaanga, J.**, Crombie, T. A., Widmayer, S. J. & Andersen, E. C. easyXpress: An R package to analyze and visualize high-throughput *C. elegans* microscopy data generated using CellProfiler. PLoS One 16, e0252000 (2021)

*Preprint:*

**Nyaanga, J. et al.** Highly scaled measurements of *C. elegans* development suggest that physical constraints guide growth trajectories and animal shape. bioRxiv 2021.04.01.438121 (2021) doi:10.1101/2021.04.01.438121

## SELECT LEADERSHIP & OUTREACH

<b>Graduate Teaching Assistant   Northwestern University</b>	<b>2020 - 2021</b>
<ul style="list-style-type: none"><li>Collaborated with faculty to instruct 100+ students across three introductory biology courses</li><li>Facilitated in-class discussions, and provided verbal and written assessment on course progress</li></ul>	
<b>Campus Tour Guide   John Carroll University</b>	<b>2015 - 2017</b>
<ul style="list-style-type: none"><li>Managed correspondence with prospective students and parents</li><li>Demonstrated the importance of clear communication while leading campus walking tours and visit programs</li></ul>	

## SELECT HONORS & AWARDS

<b>NSF-Simons Center Scholar</b> , Northwestern University <i>Fully funded scholar as part of the NSF Center for Quantitative Biology</i>	<b>2019 – Present</b>
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