

# Alyssia V. Broncano

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## EDUCATION

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### Case Western Reserve University

Pathology Ph.D. Student - Immunology Training Program

Cumulative GPA: 4.000/4.000

Cleveland, OH

Expected Graduation May 2027

### Case Western Reserve University

B.S Biology

Minors in Chinese, Chemistry, and Psychology

Cumulative GPA: 3.561/4.000

Cleveland, OH

Graduated May 2022

### Reynoldsburg eSTEM Academy

Valedictorian, Honors Diploma, AP Scholar With Honor

Weighted Cumulative GPA: 4.438/4.000

Reynoldsburg, OH

Graduated May 2018

## SKILLS

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- Technical: Google Products, Microsoft Office, R Studio, MATLAB, GraphPad Prism
- Language: conversational Mandarin, basic Spanish
- Laboratory skills: Real-Time Polymerase Chain Reaction, flow cytometry, mouse handling, protein assays, cell counting, RNA/protein extraction and purification, Western blot, tissue culture, gel electrophoresis, biohazard safety

## RESEARCH EXPERIENCE

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### Department of Pathology in the CWRU School of Medicine

#### Graduate Student

January 2023 - Present

- Investigating the role of estrogen signaling on T cell response to TGFb
- Exploring the effects of estrogen/TGFb crosstalk using *in vivo* murine models of Inflammatory Bowel Disease (IBD)
- Examined expression of estrogen and proteins relevant to estrogen production/signaling in intestinal epithelial cells

### Case Comprehensive Cancer Center (CCC) at CWRU

#### Undergraduate Research Assistant

November 2018 - May 2022

- Explored the effects of sex hormones on hematopoietic stem cell maintenance and regeneration in murine models and how this results in sex differences
- Tested the efficacy of a novel drug in inhibiting the 15-PGDH enzyme to improve symptoms of idiopathic pulmonary fibrosis in murine models; contributed to data collection
- Tested the effects of using a mast-cell inhibitor in treating bleomycin-induced pulmonary fibrosis in murine models; contributed to data collection

### Cancer-focused Summer Undergraduate Research (CanSUR) Program at CWRU

#### Summer Research Scholar

June 2021 - August 2021

- Began data collection for hematopoietic stem cell maintenance and regeneration project mentioned above
- Collaborated with a group to complete a comprehensive review presentation of mechanisms of resistance to checkpoint inhibition immunotherapies

## **Case CCC Virtual Research Program**

### ***Summer Research Scholar***

June 2020 - July 2020

- Gained introduction to R programming through completing online course
- Analyzed scholarly scientific articles on current cancer research, contributed to weekly journal club discussions
- Collaborated with a group to write a literature review of using checkpoint inhibitors as treatments for different types of cancer

## **WORK EXPERIENCE**

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### **CWRU Office of Undergraduate Admissions**

#### ***Admissions Interviewer***

August 2021 - March 2022

- Conducted virtual interviews with prospective students interested in applying to CWRU; provide information about programs and resources available to undergraduates
- Completed post-interview write-ups regarding conversations with students for admissions counselors to consult when reviewing applications

### **Ohio Department of Agriculture Animal Disease Diagnostic Lab**

#### ***Intern***

August 2017 - May 2018

- Assisted veterinary pathologists on necropsy floor with sample collection, documentation of data, and cleanup to increase productivity of workspace
- Organized documents, images, and samples from pathology cases dating back to 2016, improving the efficiency of storing data
- Completed capstone project on Bovine Respiratory Disease through analyzing ages of mortality and common pathogens present in affected cattle, which served as a prediction for future cases

## **VOLUNTEER EXPERIENCE**

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### **Society of Hispanic Professional Engineers at Case Western Reserve University**

#### ***President***

May 2021 - May 2022

- Worked alongside the executive board to organize conference logistics, professional development workshops, networking events with companies, and social bonding events for over 30 active general body members
- Represented the organization when meeting with university sponsors and company partners to request sponsorship for events
- Submitted detailed documentation of our chapter's initiatives to the SHPE National organization for evaluation; received Blue Chip award for our chapter's dedication to meeting the mission and vision of SHPE

#### ***VP of External Affairs***

May 2020 - May 2021

- Provided members with opportunities to establish professional relationships with workers in various STEM fields through our monthly "Cafecito Talks"
- Periodically updated and distributed sponsorship packets to STEM industries, as well as met with potential sponsors
- Collaborated with the executive board and chapter advisor to plan and implement engaging events

#### ***Treasurer***

May 2019 - May 2020

- Handled financial responsibilities including planning budgets on a semesterly basis, transferring funds, and documenting expenditures
- Submitted funding applications and arranged meetings with university offices and local Cleveland industries to procure nearly \$10,000 in sponsorships per semester
- Collaborated with the executive board and chapter advisor to plan and implement successful events that engage members

***Freshman Representative & Public Relations Chair***

October 2018 - May 2019

- Served as the voice of the freshmen involved by taking their feedback and presenting it to the executive board to improve the freshman experience and establish a stronger sense of community among members
- Increased freshman recruitment and retention through consistent communication with students
- Designed and promoted flyers to present events to community via social media accounts

**La Alianza at Case Western Reserve University*****VP of Administration***

May 2019 - May 2020

- Communicated with general body members through informative weekly emails to encourage involvement in the Latinx community on campus and the greater Cleveland area
- Improved efficiency of the executive board by organizing the structure of meetings, documenting ideas and delegated tasks, as well as arranging time and location of events
- Coordinated with the executive board to arrange bimonthly social and educational events for over 50 active members

**CWRU First Year Experience*****Orientation Leader***

August 2019, 2020, &amp; 2021

- Assisted a group of 20 first year students with their transition into college, serving as a positive role model
- Introduced students to campus resources, facilitated dialogue regarding campus policies and initiatives, and initiated interaction with peers through various engaging activities

**Reynoldsburg Leo Club*****Treasurer and Faction Leader***

August 2014 - May 2018

- Promoted awareness and cumulatively raised over \$45,000 as a group for pediatric cancer research through hosting events throughout the year
- Handled financial responsibilities including requesting approval for fundraisers, documenting expenditures, and allocating funds to subgroups/factions within the organization
- Led the Accounting Faction by facilitating cooperation among the seven members when completing tasks

**International Partnership of Education Research and Communication*****Cultural Ambassador***

July 2016 &amp; 2017

- Led students from Hangzhou, China through various group activities as a positive role model
- Collaborated with students through group work and exchanged cultural ideas and perspectives

**Nationwide Children's Hospital Mechanisms of Human Health and Disease*****Summer Scholar***

June - July 2017

- Participated in a rigorous program that taught information about infectious diseases and pathophysiology through lectures from experts
- Completed independent research report about Huntington's Disease as well as a group project pertaining to oncolytic viruses to educate peers on these topics

**HONORS AND AWARDS**

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- CWRU Dean's High Honors Certificate (Spring 2020, Spring 2021, Fall 2021, & Spring 2022)
  - CWRU Dean's Honors Certificate (Fall 2020)
  - Spirit of SHPE Award (2020 & 2021)
  - SHPE Certified Chapter Leader (2019 & 2021)

- La Alianza Conference Certificate of Recognition: Commitment to Personal, Professional, and Academic Development (2020)
- La Alianza Conference Certificate of Recognition: Endeavored to Understand the Latinx/Hispanic Identity (2020)
- Statement of Accomplishment for completing the Data Scientist with R Track in DataCamp (2020)

## PUBLICATIONS

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- Won Jin Ho, Julianne N. P. Smith, Young Soo Park, Matthew Hadiono, Kelsey Christo, Alvin Jogasuria, Yongyou Zhang, **Alyssia V. Broncano**, Lakshmi Kasturi, Dawn M. Dawson, Stanton L. Gerson, Sanford D. Markowitz, Amar B. Desai. (2022). 15-PGDH regulates hematopoietic and gastrointestinal fitness during aging. *PLoS ONE* 17(5): e0268787. <https://doi.org/10.1371/journal.pone.0268787>. PMID: 35587945
- Julianne N.P Smith, Brittany A. Cordova, Brian Richardson, Kelsey F. Christo, Jordan Campanelli, **Alyssia V. Broncano**, Jonathan Chen, Juyeun Lee, Scott J. Cameron, Justin D. Lathia, Wendy A. Goodman, Mark J. Cameron, Amar B. Desai. (2022). Sex-specific niche signaling contributes to sexual dimorphism following stem cell transplantation. *bioRxiv* 2022.06.12.495897; doi: <https://doi.org/10.1101/2022.06.13.495897>