

ANNETTA YUWONO

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EDUCATION

University of Pittsburgh – Pittsburgh, PA

Bachelor of Philosophy (B.Phil.) in Neuroscience

Bachelor of Science (B.S.) in Psychology

Minor in Chemistry

- David C. Frederick Honors College (FHC)
- Dean's List Awardee six times

Aug 2022 –

May 2026

RESEARCH EXPERIENCE

Undergraduate Researcher | University of Pittsburgh School of Medicine – Pittsburgh, PA

Jan 2023 –

Present

- Lab of Dr. Amantha Thathiah, Ph.D. – Associate Professor of Neurobiology
 - Graduate Student/Postdoctoral Fellow Mentor – Dr. Thais Rafael-Guimarães, PhD
- Project 1: Investigates the direct role of the amyloid precursor protein (APP) on tau pathogenesis in Alzheimer's Disease models, such as patient-derived directly induced neurons (iNs) overexpressing a novel optogenetic model of tau aggregation (optoTAU).
- Project 2: Collaborated in the investigation of the role of GRK2 on tau and ptau degradation at AD-relevant sites (e.g., pT181) and generated iNs for those respective experiments.
- Acquired proficiency in laboratory skills: western blotting, immunocytochemistry (ICC), fixed confocal imaging, co-immunoprecipitation (CoIP), cell culture (e.g., HEK293, fibroblasts, and iNs), direct neuronal reprogramming, protein extraction (e.g., Sarkosyl and CHAPS) site-directed mutagenesis, DNA cloning, plate assays (e.g., ELISA, LDH Cytotoxicity, BCA, Bradford), and statistical analysis.
- Mentors an undergraduate student, Tanner Falkler, by offering advice and support regarding relevant laboratory techniques, statistical analysis, abstract writing, and poster presentations.
 - Project: Exploring the effect of APP processing on tau aggregation, with a focus on familial AD (fAD) mutations.
- Trains and supports new lab members (e.g., PhD rotation students) in developing skills for cell culture, western blotting, DNA cloning, immunocytochemical staining, and confocal imaging.
- Leads regular presentations and contributes to discussions regarding relevant research topics in AD and personal experimental progress/productivity during weekly journal clubs and lab meetings, respectively.

Summer Research Intern | VIB-KU Leuven Center for Brain and Disease – Leuven, Belgium

Jun 2025 –

Aug 2025

- Lab of Dr. Lucía Chávez-Gutiérrez – Associate Professor of Neuroscience
 - Postdoctoral Associate Mentor – Dr. Diego Cabezudo, Ph.D.
 - Graduate Student Mentor – Lot Wetzels
- Project: Investigated the toxicity of different lengths of A β peptides (i.e., A β -38,40, and 42) on tau pathology, modeled with optoTAU, in three different WTC11 cells lines of pre- and post-induction iPSC Neurons (i.e., Naïve, APP $^{-/-}$, and familial AD mutation M233V) as part of a collaboration between the Thathiah and Chávez-Gutiérrez labs.
- Acquired proficiency in laboratory skills: western blotting, cell culture (HEK293, WTC11, WTC11 derived iPSC Neurons (iNeurons)), protein extraction (e.g., Sarkosyl and RIPA), lentivirus generation/packaging, restriction digest, PCR, DNA cloning, DNA sequencing, DNA gel-electrophoresis, MSD ELISA, cryo-sectioning, immunohistochemistry (IHC), high-throughput imaging, membrane extraction, CRISPR-Cas9, and statistical analysis.
- Supported a graduate (Ph.D.) student from the lab of Dr. Wim Annaert in applying and optimizing the directly induced neuron reprogramming protocol used at the Thathiah Lab.
- Presented a lab seminar discussing research results to culminate the summer internship.

Biomedical Research Academy Student | University of Pennsylvania – Philadelphia, PA

Jul 2021

- Awarded the Penn Summer Scholar Scholarship.

- Collaborated in a group of three with fellow researchers to investigate the evolution of COVID-19 variants, and diagnoses of coeliac disease.
- Created and led three presentations discussing the results of the lab experiments and relevant scientific journal articles pertaining to immunology.
- Acquired laboratory skills related to western blotting, ELISAs, and DNA gel-electrophoresis.

PRESENTATIONS

Yuwono, A., Rafael-Guimarães, T., PhD., Thathiah, A., PhD. The role of the amyloid precursor protein (APP) on tau pathogenesis in Alzheimer's Disease (AD). **Society for Neuroscience (SfN)**; 2025, Nov 14 – Nov 19; San Diego, CA. *Poster presentation – Awarded the Trainee and Professional Development Award (TPDA).*

Yuwono, A., Rafael-Guimarães, T., PhD., Thathiah, A., PhD. The role of the amyloid precursor protein (APP) on tau pathogenesis in a patient-derived directly induced neurons (iNs). University of Pittsburgh **Aging Institute 16th Annual Research Day Symposium**; 2025, Nov 5; Pittsburgh, PA. *Poster presentation – Awarded Best Poster (Basic Science, Undergraduate Level).*

Yuwono, A., Rafael-Guimarães, T., PhD., Thathiah, A., PhD. The role of the amyloid precursor protein (APP) on tau pathogenesis in Alzheimer's Disease. **National Conference on Undergraduate Research (NCUR)**; 2025, Apr 7 – Apr 9; Pittsburgh, PA. *Poster presentation.*

Yuwono, A., Rafael-Guimarães, T., PhD., Thathiah, A., PhD. The role of the amyloid precursor protein (APP) on tau pathogenesis in Alzheimer's Disease (AD). University of Pittsburgh **Frederick Honors College Research and Creative Expression Symposium**; 2025, Mar 21; Pittsburgh, PA. *Poster presentation.*

Yuwono, A., Rafael-Guimarães, T., PhD., Thathiah, A., PhD. The role of the amyloid precursor protein (APP) on tau phosphorylation and aggregation in Alzheimer's Disease (AD). University of Pittsburgh **Alzheimer's Disease Research Center 5th Annual OSCAR Symposium**; 2024, Nov 21; Pittsburgh, PA. *Poster presentation – Awarded Outstanding Poster (Undergraduate Level).*

Yuwono, A., Rafael-Guimarães, T., PhD., Thathiah, A., PhD. The role of the amyloid precursor protein (APP) on tau phosphorylation and aggregation in Alzheimer's Disease (AD). University of Pittsburgh **Aging Institute 15th Annual Research Day Symposium**; 2024, Nov 6; Pittsburgh, PA. *Poster presentation – Awarded Best Poster (Basic Science, Undergraduate Level).*

Yuwono, A., Rafael-Guimarães, T., PhD., Thathiah, A., PhD. The role of the amyloid precursor protein (APP) on tau phosphorylation and aggregation in Alzheimer's Disease (AD). University of Pittsburgh **Fall Undergraduate Research and Creative Expression Fair**; 2024, Oct 1; Pittsburgh, PA. *Poster presentation.*

Yuwono, A., Rafael-Guimarães, T., PhD., Thathiah, A., PhD. The role of the amyloid precursor protein (APP) on tau phosphorylation and aggregation in Alzheimer's Disease (AD). **Alzheimer's Association International Conference (AAIC)**; 2024, Jul 28 – Aug 1; Philadelphia, PA. *Poster presentation.* <https://doi.org/10.1002/alz.095493>

Falkler, T., **Yuwono, A.,** Rafael-Guimarães, T., PhD., Thathiah, A., PhD. Investigating the effect of amyloid precursor protein (APP) processing on tau aggregation in Alzheimer's Disease (AD). University of Pittsburgh **Fall Undergraduate Research and Creative Expression Fair**; 2025, Oct 14; Pittsburgh, PA. *Poster presentation.*

PUBLICATIONS

Rafael Guimarães, T., Happe, C. L., Salisbury, R., Lewin, A., Gilardi, J., Golcuk, M., **Yuwono, A.,** Doruker, P., Gur, M., Mertens, J., MacDonald, M. L., Bahar, I., Thathiah, A. (2025). GRK2 is a multifactorial modulator of tau pathogenesis. *Under final round of review in Communications Biology (Springer Nature Portfolio).*

Yuwono, A., Rafael Guimarães, T., Thathiah, A. (2026). The direct role of the amyloid precursor protein (APP) on tau pathogenesis. *(In Preparation).*

TEACHING EXPERIENCE

University of Pittsburgh, **Dept. of Neuroscience | Undergraduate Teaching Assistant**

Aug 2025 –
Present

- NROSCI 1013 Honors Functional Neuroanatomy – Dr. Erika Faselow, Ph.D.
- Developed and presented a user guide for DSI Studio, a software that allows users to visualize white matter tracts in a 3D space, for use during students' final project as a product of the Chancellor's Undergraduate Teaching Fellowship (CUTF).

<ul style="list-style-type: none"> ○ Designed and tested DSI Studio and case study assignments as a means to scaffold the skills necessary to navigate the software. • Co-leads/hosts exam review sessions and virtual office hours for five module exams. 	
University of Pittsburgh, Dept. of Undergraduate Studies Undergraduate Teaching Assistant	Aug 2025 – Present
<ul style="list-style-type: none"> • ARTSC 0101 First Approaches in Research (FA-R) – Dr. Marcie Persyn, Ph.D • Leads partial-discussions during bi-weekly classes and hosts bi-weekly office hours to address student questions and concerns about assignments and/or searching for research opportunities. • Attends monthly TA meetings led by Assistant Director of the Office of Undergraduate Research Laura Nelson and Director of Undergraduate Studies in Classics (co-instructor) Dr. Persyn. 	
University of Pittsburgh, Dept. of Neuroscience Undergraduate Teaching Assistant	Jan 2025 – Apr 2025
<ul style="list-style-type: none"> • NROSCI 1011 Functional Neuroanatomy – Dr. Erika Fanselow, Ph.D. <ul style="list-style-type: none"> ○ NROSCI 1097 Undergraduate Teaching Experience • Painted 3D printed neuroanatomical models for in-class use as a teaching aide/supplement for foundational concepts taught in functional neuroanatomy. <ul style="list-style-type: none"> ○ Spinal cord models – ascending somatosensory and descending motor pathways ○ Brain stem vasculature ○ Cortical and cerebellar perfusion areas 	
University of Pittsburgh, Dept. of Chemistry Undergraduate Teaching Assistant	Aug 2023 – Dec 2023
<ul style="list-style-type: none"> • CHEM 0120 General Chemistry II – Dr. Tamika Madison, Ph.D. • Led weekly recitations and proctored weekly quizzes with co-UTAs. • Attended weekly UTA meetings led by Dr. Madison. • Addressed student questions via email or in-person/virtual appointments. 	
University of Pittsburgh, Dept. of Undergraduate Studies Undergraduate Teaching Assistant	Aug 2023 – Nov 2023
<ul style="list-style-type: none"> • FP 0001 Academic Foundations – Marie Young • Attended classes to support first-year students in getting acclimated to the University of Pittsburgh by discussing various opportunities and resources offered at Pitt while working to develop their study skills for success in their future studies. • Led a full class introducing their final project in which students were tasked with exploring one of Pittsburgh’s neighborhoods. • Addressed student questions via email or in-person/virtual appointments. 	

AWARDS

Best Poster Award University of Pittsburgh - Aging Institute	Nov 2025
<ul style="list-style-type: none"> • Awarded for poster presentation of “The Role of the Amyloid Precursor Protein (APP) on Tau Pathogenesis in Human-Derived Directly Induced Neurons (iNs)” at the Aging Institute’s 16th Annual Research Day Symposium <ul style="list-style-type: none"> ○ Undergraduate - Basic Science Division 	
Trainee Professional Development Award (TPDA) Society for Neuroscience (SfN)	Aug 2025
<ul style="list-style-type: none"> • Awarded a merit-based stipend for travel and poster presentation at the 2025 SfN annual meeting in San Diego, CA from November 15-19. • Will present at the in the TPDA session in addition to the regularly scheduled poster session. 	
FHC Travel & Professional Development Award University of Pittsburgh - FHC	Aug 2025
<ul style="list-style-type: none"> • Awarded a travel stipend for conducting research in Leuven, Belgium at the VIB-KU Leuven Center for Brain and Disease (CBD) under the supervision of Dr. Lucía Chávez-Gutiérrez. 	
Chancellor’s Undergraduate Teaching Fellowship (CUTF) University of Pittsburgh - FHC	Jul 2025
<ul style="list-style-type: none"> • Awarded for the CUTF proposal aiming to aid in the development of the Honors Functional Neuroanatomy curriculum and final project under the direct mentorship of Dr. Erika Fanselow, Associate Teaching Professor in Neuroscience. 	
Barry Goldwater Scholarship - Campus Nominee University of Pittsburgh	Jan 2025

- Selected as one of four finalists from the University of Pittsburgh for the Barry Goldwater Scholarship.

Outstanding Poster Award | *University of Pittsburgh - Alzheimer's Disease Research Center (ADRC)* Nov 2024

- Awarded for poster presentation of "The role of the Amyloid Precursor Protein (APP) on Tau Phosphorylation and Aggregation in Alzheimer's Disease (AD)" at the ADRC's 5th Annual OSCAR Symposium.
 - Undergraduate Division

Best Poster Award | *University of Pittsburgh - Aging Institute* Nov 2024

- Awarded for poster presentation of "The role of the Amyloid Precursor Protein (APP) on Tau Phosphorylation and Aggregation in Alzheimer's Disease (AD)" at the Aging Institute's 15th Annual Research Day Symposium.
 - Undergraduate - Basic Science Division

MEMBERSHIPS

International Society To Advance Alzheimer's Research and Treatment (ISTAART) Since Jul 2024
Alzheimer's Association – Student Member

- Attended Professional Interest Area (PIA) sessions at the AAIC 2024 meeting.
- Attends ISTAART events at other international conferences (*e.g.*, SfN).

Outside of the Classroom Curriculum Honors Society Since Dec 2024
University of Pittsburgh

- Participated in activities offered inside and outside of the University of Pittsburgh to fulfill requirement for completion of all ten required modules including Communication Skills, Leadership Development, Appreciation of the Arts, Career Preparation, etc.

International Society for Molecular Neurodegeneration (ISMND) Since Jan 2025
Student Member

- Attends regular seminars discussing current breakthrough research on neurodegeneration.

Society for Neuroscience (SfN) Since Jun 2025
Student Member

- Attended SfN 2025 annual meeting.
- Applied for SfN opportunities and awards (*e.g.*, TPDA)

National Society of Leadership and Success (NSLS) Since Aug 2025
University of Pittsburgh

- Attends seminars on building leadership skills.
- Nominated for leadership success as a member of the FHC

COMMUNITY OUTREACH

Volunteer | *Tree Pittsburgh – Pittsburgh, PA* Aug 2023 – Present

- Obtained a Pitt Tree Tender's Certification for tree pruning and planting.
- Participates in tree planting projects in various Pittsburgh neighborhoods.
- Repots native trees at the Tree Pittsburgh heritage Nursery for future planting projects/deliveries

Knittsburgh Member | *University of Pittsburgh – Pittsburgh, PA* Aug 2023 – Present

- Participates in seasonal projects led by the Knittsburgh leadership board

Neuroscience Club Member | *University of Pittsburgh – Pittsburgh, PA* Jan 2024 – Present

- Selected as one of three student panelists to discuss experiences as a Neuroscience major and career goals with underclassmen members.

Panther Leadership Academy (PLA) | *University of Pittsburgh – Pittsburgh, PA* Jan 2024 – Dec 2024

- Developed leadership philosophies and discussed current social issues through the lens of different leaders.
- Participated in team building activities with peers to strengthen communication and critical thinking skills.
- Presented a personal project discussing current social issues (Disenfranchisement) as a marker of program completion.

Rostered Player | Pitt Women's/NB Club Ultimate Frisbee | University of Pittsburgh – *Pittsburgh, PA* Aug 2022 – Sept 2023

- Member of the High Voltage (Pitt Women's Ultimate B Team) leadership core
- Off-field Role - Environmental Safety Lead
- Collaborated to design High Voltage jerseys for the 2023 series.

Rostered Player | Women's/NB Club Ultimate Frisbee - Incline | Pittsburgh Ultimate – *Pittsburgh, PA* May 2023 – Aug 2023

Co-founder | More Than Cake – *Philadelphia, PA* Dec 2020 – Aug 2022

- Website: <https://www.morethancake.net/menu>
- Co-founded a local online bakery during the Covid-19 pandemic as a means to share positivity and stay connected.
- Catered for Julia R. Masterman High School events such as Asian Cultural Association movie nights, Science Olympiad club fairs, and VIBE art expos.
- Participated in The Greatest Baker 2021 Competition.
- Created advertisement content on YouTube and Instagram.

LANGUAGES

English – native/bilingual fluency

Bahasa Indonesia (Indonesian) – native/bilingual fluency

French – limited working proficiency