

SYNAPSE

BYU NEUROSCIENCE NEWSLETTER



WINTER 2020

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TABLE OF CONTENTS

3	INTRODUCTION TO YOUR CAREER DIRECTOR - LINDA EVANS
4	ALUMNI SPOTLIGHTS
6	UNDERGRADUATE SPOTLIGHT: SETH SMITH
8	MEET CHRISTINE O. WORTHINGTON
10	THE BEAUTY OF NEUROSCIENCE: 2020 ART CONTEST
16	VIRTUAL MARY LOU FULTON MENTORED STUDENT RESEARCH CONFERENCE
18	2020 FHSS/NEUROSCIENCE VIRTUAL CONVOCATION
19	VALEDICTORIAN - MACI JACOBSON
20	THE SAMUEL INJAE SHIN SCHOLARSHIP: A LEGACY OF GIVING
23	NEUROSCIENCE ENDOWMENT FUND



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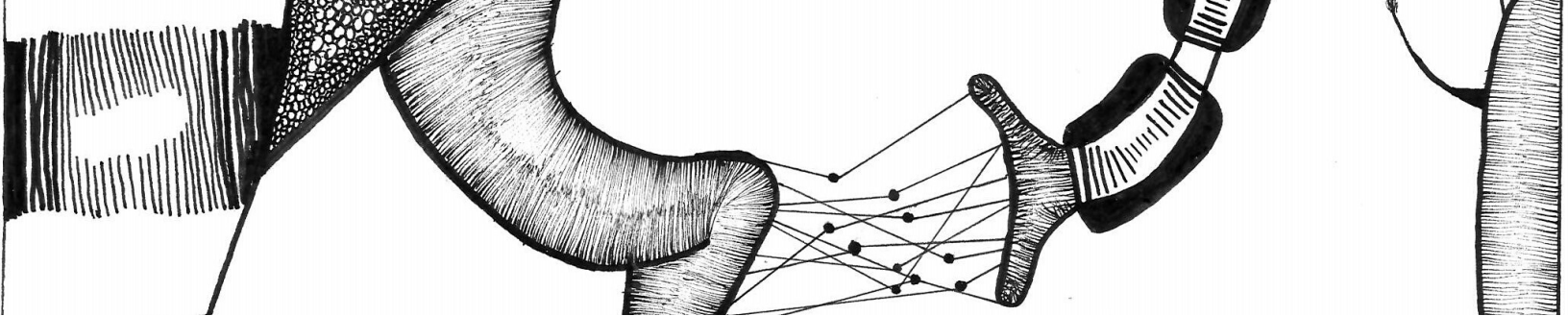
INTRODUCTION TO YOUR CAREER DIRECTOR

LINDA EVANS

Linda is a proud graduate of Brigham Young University (BYU), where she earned her B.A. in American Studies and Minor in Ballroom Dance in 2011. She was born in China, moved to Guam when she was seven, and grew up in Seattle since age eight. She joined the Church of Jesus Christ of Latter-day Saints at age eighteen and moved to BYU a month later. The monumental experiences she had as a student at BYU include

performing with the Ballroom Dance Team and Vocal Jazz Ensemble, working as a SOAR Counselor and American Heritage TA, and volunteering for New Student Orientation for seven semesters.

After graduating from BYU, Linda started her career coaching business *Launched by Linda* and moved to Washington, DC. It was there that she started the first of three different master's programs before finally graduating in Psychological Counseling from Columbia University in New York City. She worked a year as a Career Counselor before she moved back to BYU in 2017 to try working as an Academic Advisor in Multicultural Student Services. Linda switched to her current role in Career Services in September 2018 and loves serving the 2,800 students in the departments of Neuroscience, American Studies, Economics, English, Editing, Linguistics, Philosophy, and Political Science. In 2019, she married her husband who she met on the Ballroom Dance Team. He teaches Spanish at BYU.



ALUMNI SPOTLIGHTS



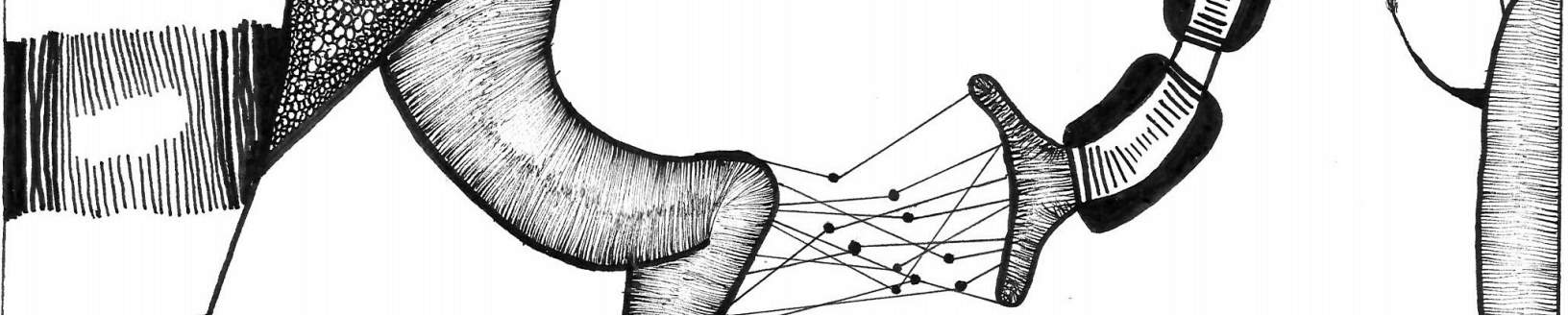
JOSHUA SMITH, M.D.

Graduated: 2002

After graduating from BYU, Joshua Smith M.D. subsequently attended the University of Texas Southwestern Medical School in Dallas and the University of Texas at Dallas Cohort MBA program. Dr. Smith was the first to graduate from this joint MD/MBA program in 2007. "My time at BYU, especially the classes in the Neuroscience program, taught me how to analyze data, understand complex biological systems, and laid the foundation for my medical career." After completing medical school, he completed his residency in Pediatrics and then a fellow-ship in Pediatric Endocrinology. "I currently practice pediatric endocrinology in Idaho Falls and enjoy interacting with the children I treat and studying the science behind their



different hormone disorders. Endocrinology was introduced to me by the faculty at BYU and I was able to perform some basic research in Dr. Alan Judd's lab as an undergraduate. I loved my time at BYU and feel that the Neuroscience program provided a great foundation for future research and education."



ALUMNI SPOTLIGHTS



JOSEPH LINZEY, M.D.

Graduated: 2014

Joey Linzey M.D. entered medical school at the University of Michigan Medical School soon after graduating from the BYU Neuroscience program. "The appreciation and fascination with neuroanatomy that Dr. Mike Brown instilled in me during my undergraduate years carried through to medical school. I came into medical school with a strong interest in the neurosciences and a knowledge that I wanted to be in the operating room." After completing a Master of Science in Clinical Research degree at the University of Michigan School of Public Health, he started a neurosurgical residency at the University of Michigan. "The phenomenal foundation I received from the BYU Neuroscience program and the strong



research background I developed with Dr. Scott Steffensen have served me well in my journey to become an academic neurosurgeon."



UNDERGRADUATE SPOTLIGHT:

SETH SMITH



Seth Smith is a senior from Waddell, Arizona and is a neuroscience major, with minors in gerontology, psychology, and business. He plans to attend medical school upon graduation, with a gap year allotted for sundry adventures. Seth hopes to pursue a career in research and medicine with a focus on Alzheimer's Disease and Dementia. Last summer, he was selected for an internship in geriatrics in Miami Jewish Health in Miami, Florida, with three other BYU students also minoring in gerontology. While in Florida, Seth was able to shadow Dr. Marc Agronin - a leading geriatric psychiatrist - and participate in hands on geriatric care. Dr. Agronin has written several books including *The End of Old Age: Living a Longer, More Purposeful Life* and several essays in the New York Times, Scientific American Mind, and Wall Street Journal.

Shadowing Dr. Agronin has been one of Seth's best experiences as an undergraduate at BYU.

Seth enjoys visiting older individuals at retirement homes on the weekends and spending time with his grandparents. He is currently collaborating with Dr. Agronin on a research paper about the effects of cognitive therapy in populations who have pre-clinical Alzheimer's Disease and also studying possible future treatments.

Not only have Seth's experiences with older individuals in personal, clinical, and academic settings been fulfilling and inspiring, but they have also led to his being named one of twenty service award winners in Gerontology.



UNDERGRADUATE SPOTLIGHT:

SETH SMITH



"BYU is a community dedicated to two things: the love of learning and learning how to love, and nowhere is that truer than the fields of Neuroscience and Geriatrics. That is what makes these two fields so special. Their purpose is to understand the human experience through the scientific lens. This makes them, by nature, empathetic endeavors." - Seth Smith

It took Seth a while to find his passion for neuroscience and geriatrics. He attributes this to his initial overemphasis on classwork. All this changed when he discussed his future plans with a trusted teacher in the neuroscience center, who invited him to get out and "gather data," or go find as many hands-on opportunities as he could in

research and clinical settings. It was this advice that led him to his summer internship in Miami and subsequent interest in geriatric neurology. He is amazed at the doors of opportunity BYU has opened for him, and deeply appreciates the classmates and teachers who are his friends and mentors.



MEET CHRISTINE O. WORTHINGTON

NEUROSCIENCE CENTER OFFICE MANAGER

I love all things office. Before we even owned a couch, I asked for a paper cutter and a 3-hole punch for my first married Christmas so we could establish our own home office. I had been spoiled by my parents who gave my 12 siblings and me access to a Gestetner, later on a copier, IBM Selectric typewriters, twin home computers (before home computers were cool) running the powerful Word Star software from floppy discs, a variety of papers, and endless other office supplies.

My favorite class at Orem High School was steno pool, where we got to come early mornings for a two hour session of typing handouts and tests for faculty and running off copies using mimeograph or other hand-cranked revolving printing machines. I attended BYU then earned a degree in accounting from Utah Technical College which is now UVU before serving in the Minnesota Minneapolis Mission.



Nearly 30 years, a marriage, 5 children, and 5 grandchildren later, I returned to BYU in 2017 as office manager in BYU's Neuroscience Center. Skills honed as a mom, home manager, family historian, Boy Scout Advancement Chair, Church youth leader, Days For Girls workroom host, and doctors' office billing clerk prepared me for managing the Neuroscience Center. All my wildest dreams have come true.

It has been exciting to participate in the remodel of the center, the hot dog socials, and other events including the launch of the annual art contest. I love meeting sharp students who come by the center to be hired or to work out details for internships. Working as a team with student secretaries has been a highlight and it makes it hard to see them go. I greatly appreciate the patient mentoring of so many admirable staff/ admin and faculty.

TEN THINGS YOU CAN FIND ME DOING OUTSIDE OF WORK:

1. TURNING HEARTS
2. LISTENING TO TALK RADIO/PODCASTS
3. GROWING TOMATOES
4. READING CHILDREN'S LIT, BIOGRAPHIES, HISTORY
5. COOKING WITH MY FAMILY
6. SEWING WITH FRIENDS
7. SHARING THE JOY OF PAPER ROCKETS (CALL ME ROCKET MA'AM)
8. PLAYING (BEGINNER) PIANO
9. MORNING WORKOUT/DEVOTIONAL
10. FLYING MY TITLE OF LIBERTY FLAG

TEN THINGS I LOVE ABOUT WORKING AT BYU:

1. STAPLELESS STAPLER!
2. COPIER WITH STAPLELESS STAPLER
3. "A" PARKING PRIVILEGES
4. DUAL MONITORS
5. SOLVING STUDENT SECRETARY SCHEDULE PUZZLE
6. EYRING SCIENCE CENTER
7. EFFICIENT OFFICE SUITE
8. CLEAN AND BEAUTIFUL CAMPUS
9. CLEAN AND BEAUTIFUL STUDENTS
10. HELPFUL AND FRIENDLY STAFF/ADMIN, AND FACULTY



The Beauty of Neuroscience:

ART CONTEST

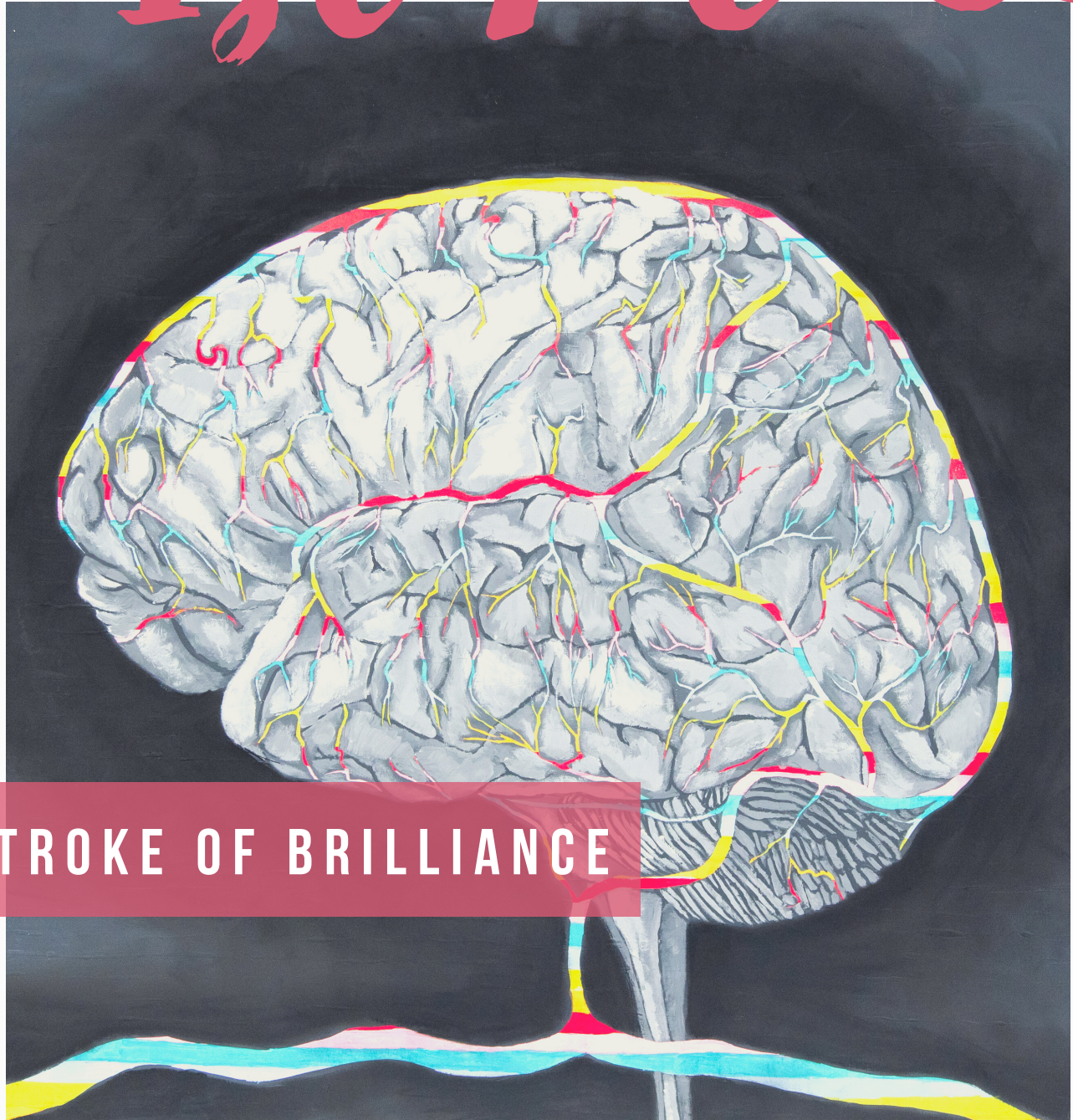
When the Neuroscience Center renovation was completed in late 2017, the newly plastered stark-white walls were tauntingly bare. It would have been easy to fill them with mass-produced artwork and decorations readily available online, but Neuroscience faculty member Dr. Rebekka Matheson had a better idea.

She suggested a Neuroscience art contest and thus, the Art Contest was born. Dr. Matheson grew up appreciating the beauty of community artwork while helping her mother, an artist and curator, at a local gallery. As a devoted teacher and mentor, she knew that there was great talent among the Neuroscience students

and wanted to give them a platform to express themselves. The first Art Contest was a success, and the submitted artwork completely amazed everyone involved. That first year, the Neuroscience Center received fourteen entries, some of which can be found on the Neuroscience office walls. Each year since, the art submissions have come in an impressive variety of mediums, illustrating perspectives of neuroscience and showcasing BYU and the gospel.

For the first two years, the Neuroscience Center hosted an art display event open to the public coinciding with the nationally observed *Brain Awareness Week*. In this way, anyone who wanted to could gather to celebrate neuroscience and enjoy the skill and creativity of BYU's neuroscience students. Although the event could not be held in person this year, the Neuroscience Center created a digital gallery on its website, giving everyone the chance to appreciate the outstanding art submissions (<https://neuroscience.byu.edu/2020-art-contest>). We showcase a few of them here as well.

1st Place



A STROKE OF BRILLIANCE

By Emma Murdock

Everyday we are constantly influenced by things around us. That information and stimulus is constantly being spread throughout our brain, interpreted, and then used to help us adapt to our surroundings. This vast diffusion of information can be shown through many things including our vasculature. Even the simplest details of our brain show the interconnecting webs that make us who we are.

2nd Place

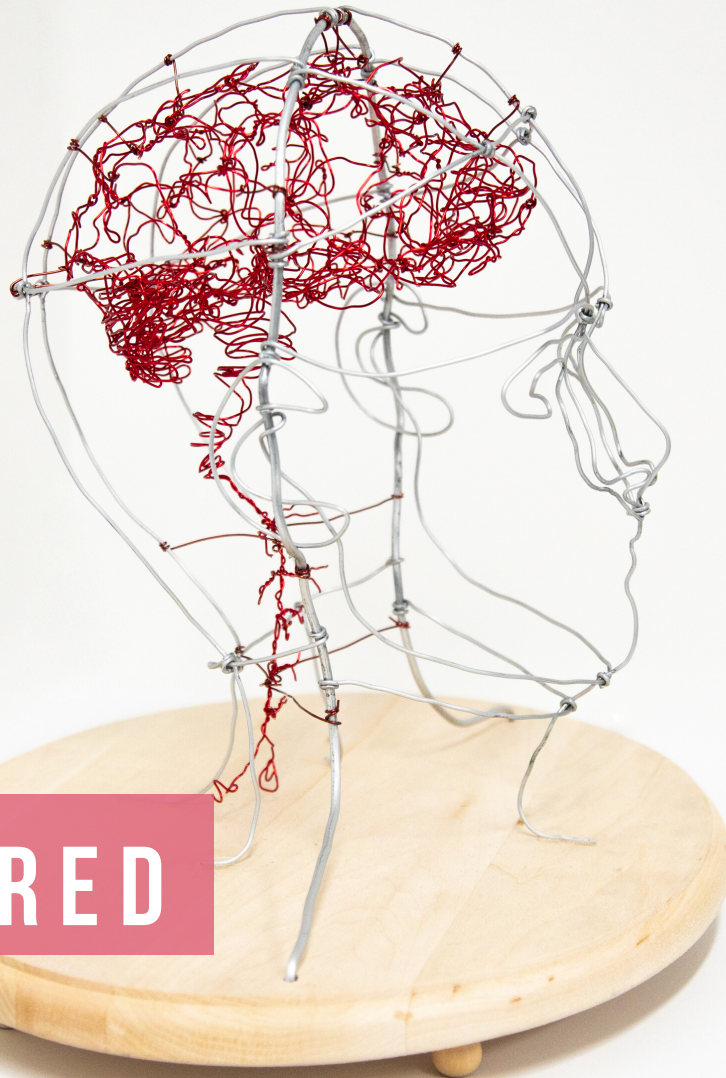


EFFLORESCENCE

By Dasani DelRosario

I was inspired by the beauty and ethereal qualities of the human brain—complexity and specialization which can only be attributed to a divine creator. We are the gardeners of our own unique and beautiful flower gardens, in charge of the upkeep of our mental health. Everyone has different flowers which require different amounts of care and nutrients in order to bloom and thrive.

3rd Place



WIRED

By Shawna Lawlor

I was thinking of how our brain is “wired” to function in the awe-inspiring way it does and came up with the idea to create an image of the brain using wires. Using the wires to create a form was much more difficult than I imagined, but I had fun watching the pieces come together and take shape of what I love studying about.

Honorable Mention



By Celine Timpson

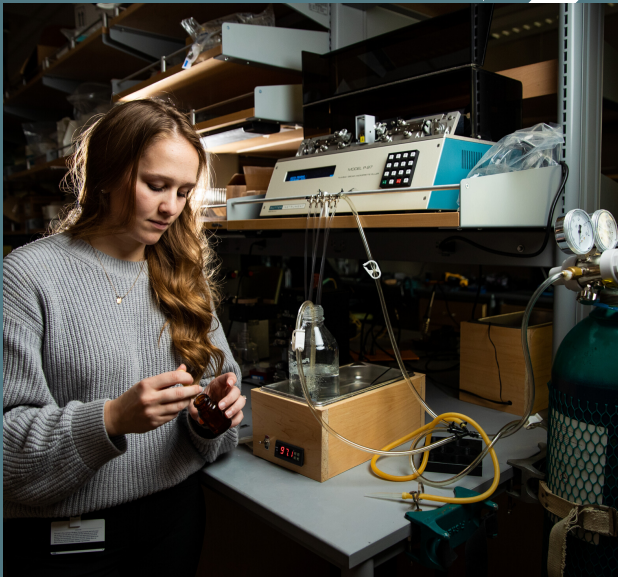
Once upon a time I had a really great neurobiology professor (Professor Scott Steffensen) who got me really excited about the brain; one time he showed us a picture of all these beautiful neurons stained, and to me it looked like everything space. So, I put neurons with my tiny astronauts in space. There are some little hidden gems if you look closely. You'll be able to see microglial cells, astrocytes, different types of neurons, hippocampus (Latin for seahorse) and the chemical structures for GABA and dopamine (neurotransmitters). The brain is beautiful and reminds us we are made of stars.

Honorable Mention



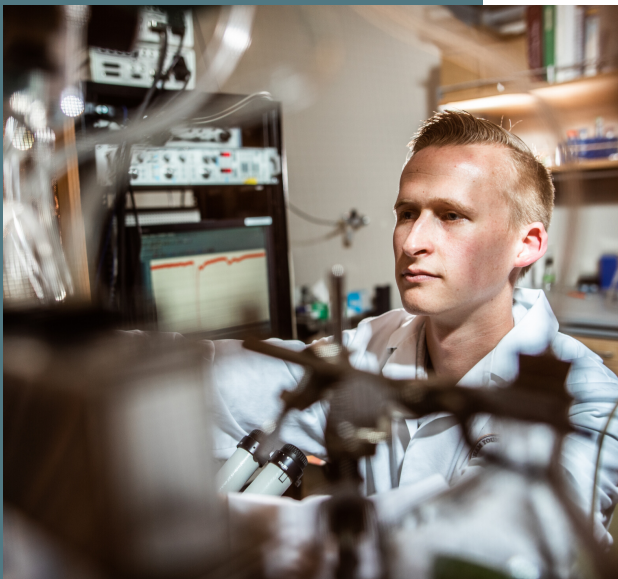
By Leslie Neville

In my neuroanatomy class this semester, I've learned that the brain is truly as complex as the galaxies and universal laws by which it is governed. I feel this painting conveys the infinite capacity and potential housed within the finite chambers of the mind.



VIRTUAL **MARY LOU** **FULTON**

MENTORED STUDENT RESEARCH CONFERENCE



If not for the pandemic, we would have met on April 9, 2020 for the FHSS Fulton Mentored Student Research Conference, where 261 student posters would have been displayed. We miss this opportunity to interact with so many of you who diligently prepared posters, and look forward to next year for a renewal of the conference.



The college decided this year to provide an opportunity for a virtual poster session, so that faculty, students, and the general public would all have opportunities to browse the posters and see the quality of research that so many of our students are experiencing during their time at BYU. Using the link below, you may browse undergraduate and graduate submissions within each department of the college:

<https://fultonchair.byu.edu/GeneralSpectators/PosterViewing>

Assessing the
Relationship Between
Mindfulness Meditation
and Neural Responses
to Emotional Faces -
Mika Honda

Effects of Acute and
Chronic Morphine on
Lateral Paracapsular
Amygdala Circuitry -
Valerie Stolp

Analysis of
Interhemispheric Transfer
Time in Adolescents with
Concussion: A
Longitudinal Study -
Bradley W Clark

Examining the Biological
Basis of Aggression in
Young Rhesus Monkeys
(Macaca mulatta) with
Chinese and Indian
Ancestry - Parker Jarman

POSTER SUBMISSIONS

Effects of Adolescent
Concussion on Neural
Performance
Monitoring: A
Longitudinal Study -
Emma Jane Gleave



**1st Place
Winner**

Comparison between
the Superior Temporal
Asymmetrical Pit of
Typically Developing
and Autistic Individuals -
Jonathan W Borden

Comparison of Objective
and Subjective
Measures of
Physical Activity - Daniel
Gifford



2020 FHSS/NEUROSCIENCE VIRTUAL CONVOCATION

Please View this Link:

[HTTPS://FHSSGRADUATES.BYU.EDU](https://fhssgraduates.byu.edu)

Neuroscience Graduates:

[https://fhssgraduates.byu.edu/
Graduates/Neuroscience](https://fhssgraduates.byu.edu/Graduates/Neuroscience)

Valedictorians:

<https://fhssbyu.com/2020/04/>

VALEDICTORIAN MACI JACOBSON

Maci Jacobson was born and raised in Riverton, Utah. She is a passionate BYU sports fan and is an artist, often called the “Gum-wrapper Girl” for her ability to make art out of gum wrappers. In high school, Maci played and lettered in basketball, tennis, golf, and track. When injuries cut her sports career short, she focused more on school and was led to study neuroscience. She has fallen in love with the field as it has taught her more about empathy, healthy lifestyle, and the gospel. At BYU she found her passion for research and received two grants for undergraduate research studying the effects of nutrition and exercise on cognition. Maci hopes to eventually return to BYU as a neuroscience professor and contribute to unlocking the brain through research. Maci has been married for almost a year to Trace, the man of her dreams, and they currently live in Draper, Utah. After graduation, Maci will start her PhD in Neuroscience at the University of Utah.

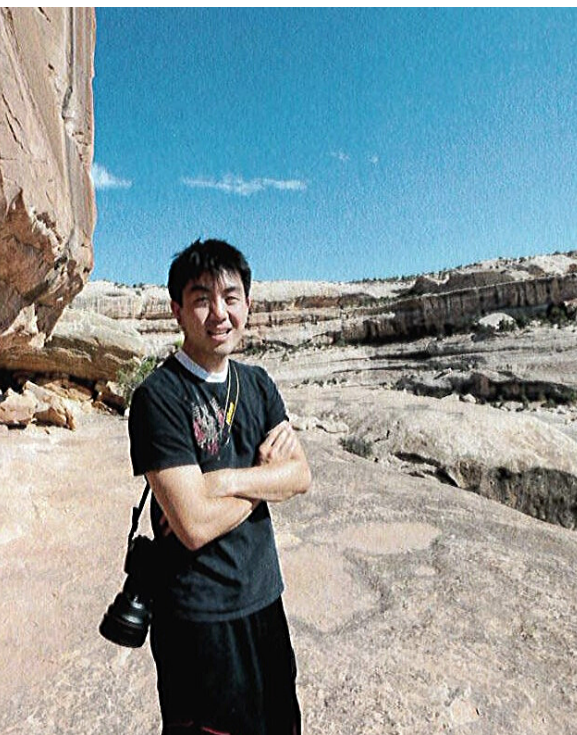




THE SAMUEL INJAE SHIN SCHOLARSHIP:

A LEGACY OF GIVING

The Samuel Injae Shin Endowed Scholarship/Mentorship Fund was established in 2017 by the family of Samuel Shin in honor of their son who tragically passed away in August of 2016. It is awarded annually for the winter semester to Neuroscience undergraduate students and has blessed the lives of thirty-two students over the last four years.



Samuel's parents note that he was gifted with intelligence, a good work ethic, and a sense of humor. He had a thirst for knowledge, and he loved his research in neuroscience. Samuel had many interests - photography, piano, rock climbing, basketball, snowboarding, and various other outdoor activities. He spoke multiple languages, including Spanish, Korean, and Dutch. He often said, "with a testimony anchored in Christ... Joy understands God's plan of salvation and allows us to overcome selfishness and helps us to truly forget ourselves." Samuel was loved and respected by many individuals who knew him..

Samuel was born in Provo, Utah and attended schools in Nijmegen in the Netherlands, and Portland, Oregon. He graduated from Seoul International High School in Korea. Samuel attended BYU and was awarded with the Heritage Scholarship. He graduated with B.S. and M.S. degrees in Neuroscience. Samuel served as a missionary for the Church of Jesus Christ of Latter-Day Saints in the California Arcadia Mission.

Samuel had a rock-climbing accident at Cascade Water Falls in Oregon as he was trying to help an injured friend and passed away on August 13, 2016. At the time of the accident, he was serving as the Elder's Quorum President in a singles ward of the Beaverton Oregon Stake. Samuel left a legacy of faith, obedience, integrity, and a love of God and of fellow men. The Samuel Injae Shin Endowed Scholarship/Mentorship Fund is a way to continue his legacy as a life-long learner in neuroscience as well as his example of a righteous life.

This Winter 2020 semester, eight students received this scholarship. The award winners include Emma Gleave, Hannah Chamberlain, Emily Baldwin, James Bates, Eli Baughan, Julia Cornwell, Jonathan Heaton, and Zachary Jager. We highlight two of the recipients below.



“I HOPE TO BE ABLE TO GIVE BACK TO MY COMMUNITY, STRUGGLING STUDENTS, AND OTHERS WITH MY CAREER IN THE FUTURE.” - EMMA GLEAVE

SHIN SCHOLARSHIP RECIPIENT:

EMMA GLEAVE

A Junior/Senior from Salt Lake City, Utah, Emma is majoring in neuroscience with a double-minor in political science and psychology. While an unusual combination, she is passionate about her coursework and excited to pursue a future career carving out the field of overlap between policy work and neuroscience. Emma has conducted research in Dr. Michael Larson's EEG lab for a year now participating in multiple experiments. More recently she has learned data processing in addition to data collection. Emma has been a member of the BYU Neuroscience Club for three years and participated in the Brain Awareness Week teaching elementary students about the brain. Emma said “I greatly desire to work in the field of overlap between policy work and neuroscience. This has led to my aspiration for a law degree in addition to a Neuroscience PhD, with Stanford as my top choice for a dual-degree program. Thanks to a unique study abroad experience, I now understand the policy-relevant areas where I could bring and carry out neuroscientific research, such as looking at PTSD in Northern Ireland or with Rohingya refugees in London.”

Emma said she was very grateful to the Shin Family for their generosity. She “hope[s] to be able to give back to my community, struggling students, and others with my career in the future.”



“I PLAN TO IMPACT THE WORLD FOR GOOD AND HONOR SAMUEL'S NAME BY MY WORK.” - HANNAH CHAMBERLAIN, JR.

SHIN SCHOLARSHIP RECIPIENT:

HANNAH CHAMBERLAIN, JR.

Hannah is a junior studying neuroscience at BYU. She has enjoyed doing research on neural tube defects in Dr. Michael Stark's lab. Her research and coursework allow her to explore multiple interests in early development and neural function. Hannah is also interested in how we learn, memory, addiction, and reproductive biology and endocrinology.

Hannah's current research assessed the causes and mechanisms of neural tube defects in chicken embryos given her exposure to advanced technology and lab procedures, as well as cherished interactions with experts in the field. She said, "I am contributing immunohistochemistry and histological data and analyses to a paper we will publish this spring. This paper will present our findings on how various ceramide concentrations affect the incurrence of neural tube defects." Hannah also had the privilege of participating in Northwestern University's "Biology Investigations in Reproduction and Development" program as a high school student. There, she observed and performed experiments involving reproduction and development in frog eggs, sea urchins, and zebrafish. "I learned to love witnessing the cellular processes of life."

Hannah is currently preparing to apply for PhD programs, such as the one at Northwestern University in Chicago, her hometown.

Hannah said, "Offering this endowment to neuroscience students in Samuel's name is such a special way to honor his life and pursuits, and I am thankful to participate. I plan to impact the world for good and honor Samuel's name by my work."





NEUROSCIENCE ENDOWMENT FUND



Dear colleagues, students, and alumni

Imagine if you could help students achieve their educational goals and learn through experience. The Neuroscience Endowment Fund will provide funding for:

- Scholarships
- Internships
- Experiential learning experiences

All funds go directly to the students. We are asking for your help as we can not do this without you. Please join us in supporting students in their neuroscience education.

If you wish to donate, please follow the link below:

<https://donate.churchofjesuschrist.org/donations/byu/univ-wide-priorities.html?cde2=799-home>

Instructions

1. Search: "Select other funds" box and choose "BYU" under "Other Funds"
2. Scroll down to "FHSS – Neuroscience – BYU" and hit "Select" (this will add the Neuroscience Fund Option)
3. Enter an amount and then scroll down to the Frequency and Method of Payment sections
4. In the section "Add Comment or Memoriam Information," select the "Comments or instructions" box and enter the Neuroscience Endowment Fund to which you would like to donate

BYU Neuroscience Center

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about BYU Neuroscience, visit our
website: neuroscience.byu.edu.

**Created by the BYU
Neuroscience Center
- Jessica Walton and
Megan Stewart**

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and Claire Felsted**

**Photography by BYU
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**BYU Neuroscience
Newsletter Issue:
Winter 2020**

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