

# Copy Personal Background

<b>Form Title</b>	Personal Background 2024
<b>Name</b>	
Prefix	Mr.
First (Given)	Yahriel
Last (Family)	Salinas-Reyes
Preferred First	Yahriel
Other Last Names Used	Salinas-Reyes
<b>Telephone Numbers</b>	
Mobile	+1 515-314-4160
Opt-In to Text Messaging	No
<b>Biographical Information</b>	
Gender	M
Personal Pronouns	He/Him/His
Birthdate	11/11/2000
Birth Country	United States
<b>Citizenship Information</b>	
Primary Citizenship	United States
<b>Race/Ethnicity</b>	
Are you Hispanic or Latino?	Yes
Regardless of your answer to the prior question, please check one or more of the following groups in which you consider yourself to be a member:	American Indian or Alaska Native  American Indian or Alaska Native - Other  American Indian or Alaska Native - Other  American Indian or Alaska Native  Native American and Significant Indigenous Heritage (87%) from Latin America and Indigenous Americas
Provide more information:	American Indian or Alaska Native - Other  American Indian or Alaska Native - Other  American Indian or Alaska Native
Other:	Native American and Significant Indigenous Heritage (87%) from Latin America and Indigenous Americas

# Copy Additional Contacts

**Form Title** Additional Contacts 2024

## Contacts

**1) Name** Sonia

**Relationship to you** Mother

**Phone** +1 51534144160

**Email** soliyas@aol.com

# Copy Academic History

**Form Title**

Academic History 2024

# Copy Current Status

**What is your current status?** Current Status 2024

**On what year graduate student you be? September 1, 2024 (next year), will** Undergraduate

**First**

## Graduate Institution

**Proposed Graduate School** Stanford University

**Other Potential School Choices** California Institute of Technology  
Harvard  
MIT  
UC Berkeley  
Tecnologico de Monterrey

## Field of Study

**General Field** Neuroscience and Biomedical Data-Science/Informatics

**Specialty Area** Division of Mathematical Sciences" Computational and Data-Enabled Sciences

**Toward what ultimate degree will you be working while in Graduate School?** PhD

**During what calendar year do you expect to complete your PhD studies?** 2028

**Please list other multi-year Fellowships you have applied for, currently hold, or are planning to apply for:** NSF-GRFP, Fulbright-National Geographic Award, Google Fellowship, Knight-Hennessey

## Preparation for Graduate Work in the Applied Physical Sciences

<b>Physics</b>	25.00
<b>Chemistry</b>	10.00
<b>Mathematics</b>	25.00
<b>Computer Science</b>	25.00
<b>Earth Science</b>	02.00
<b>Modern Biology</b>	02.00
<b>Engineering (ME, ChE, EE, CE)</b>	25.00

# Copy The Interview

**Form Title**

The Interview 2024

**Code for Closest Airport**

DSM

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## Brief Essays

**Form Title**

Brief Essays 2024

**Question 1: Choice of Field and Future Expectations**
**Question 1 Essay - How did you choose your field and what are your primary expectations of your future career?**

My journey into the world of aerospace and aeronautical engineering is a story of passion, curiosity, and a relentless pursuit of understanding. From a young age, I was fascinated by the marvels of flight and space exploration. The idea of defying gravity and pushing the boundaries of human achievement captivated my imagination.

This passion led me to pursue a Bachelor of Science in Aerospace Engineering, where I gained a strong foundation in the principles of flight, aerodynamics, and spacecraft design. During my undergraduate years, I had the opportunity to work on research projects related to aircraft design and composite materials. These hands-on experiences deepened my connection to the field and reinforced my desire to contribute to the aerospace industry.

Simultaneously, I pursued a second Bachelor's degree in Materials Science and Engineering. This multidisciplinary approach allowed me to explore the development of advanced materials for aerospace applications. I recognized that materials innovation was a key driver of progress in aerospace technology, and I was determined to be at the forefront of these advancements.

My academic journey continued with a Master of Science in Aerospace Engineering, where I focused on computational fluid dynamics and aerospace design. This specialization allowed me to delve into the intricacies of numerical simulations and data analysis, skills that are crucial for modern aerospace research.

Currently, I am working towards a Doctorate of Philosophy in Aerospace Engineering with a focus on Computational and Data-Enabled Sciences. I am excited about the potential for machine learning, data analysis, and computational methods to revolutionize aerospace research. My primary expectation for my future career is to be at the cutting edge of innovation in the aerospace and aeronautical industry. I aspire to contribute to the development of advanced aerospace technologies and to make a positive impact on the field through my research.

**Question 2: Proposed Field of Study**
**Question 2 Essay - How does your proposed field of study and career constitute an application of the physical sciences or engineering?**

The future of aerospace is incredibly promising, with opportunities for breakthroughs in propulsion systems, aircraft design, and space exploration. I am driven by a deep-seated passion for this field and a commitment to advancing the boundaries of human achievement in aerospace engineering.

My proposed field of study in Computational and Data-Enabled Sciences within the realm of Aerospace, Aeronautical, and Mechanical Engineering is inherently grounded in the physical sciences and engineering. It represents the convergence of cutting-edge technology and scientific principles to advance the aerospace industry.

Aerospace engineering, at its core, is an application of physical sciences. It leverages principles of aerodynamics, fluid mechanics, thermodynamics, and materials science to design and develop aircraft, spacecraft, and propulsion systems. My research in this field directly applies these fundamental physical principles to real-world challenges. In the pursuit of efficient and sustainable aerospace solutions, I utilize

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# Brief Essays (continued)

computational methods and data analysis. Computational fluid dynamics, structural analysis, and machine learning algorithms are integral to my work. These tools allow me to model and optimize complex aerospace systems, predict performance, and make data-driven decisions. My research contributes to the advancement of physical sciences by pushing the boundaries of what is achievable in aerospace engineering.

Furthermore, my career goals align with engineering practices that impact society. The aerospace industry plays a vital role in global transportation, national security, and space exploration. My work contributes to the development of safer and more efficient aircraft, environmentally friendly propulsion systems, and innovative space technologies. These engineering solutions have broader impacts, from reducing carbon emissions to expanding our understanding of the universe.

In summary, my proposed field of study and career represent the quintessential application of physical sciences and engineering. They bridge the gap between scientific knowledge and technological innovation, with the aim of pushing the boundaries of aerospace engineering and making a positive societal contribution.

## Question 3: Choice of Graduate School

### Question 3 Essay - What are the considerations involved in your choice of graduate school?

**Research Opportunities:** The availability of research opportunities aligned with my field of study, Computational and Data-Enabled Sciences, was a paramount consideration. I chose a graduate school with a strong emphasis on aerospace engineering research, especially in areas that intersect with computational methods and data analysis. This ensures that I have access to cutting-edge projects and can contribute to transformative research in my chosen field.

**Interdisciplinary Potential:** I value interdisciplinary collaboration and the potential for research that transcends traditional boundaries. My graduate school has renowned professors with extensive experience in aerospace engineering, as well as in data science and computational methods. This multidisciplinary approach enables me to explore innovative solutions by integrating diverse fields of knowledge.

**Mentorship:** The guidance and mentorship I receive are vital to my academic and research success. Their expertise and commitment to guiding the next generation of researchers played a significant role in my decision.

**Financial Support:** Pursuing a Ph.D. is a substantial commitment, and financial support is essential. My choice of graduate school offers competitive financial aid packages and fellowship opportunities that alleviate the financial burden of graduate studies. This support not only enables me to focus on my research but also reflects the institution's commitment to nurturing academic talent.

**Broader Impacts:** Beyond academic and research considerations, I was drawn to a graduate school that places a strong emphasis on broader impacts. The institution actively supports outreach and community engagement initiatives, aligning with my commitment to making a positive societal contribution through my work.

This has been a comprehensive process, taking into account research opportunities, interdisciplinary potential, mentorship, financial support, and a commitment to broader impacts. It aligns seamlessly with my

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# Brief Essays (continued)

academic and research goals, providing the ideal platform for my Ph.D. journey.

## Question 4: Chronological Synopsis

### Question 4 Essay - Chronological Synopsis

- Applied Science and Technology Experience (2019-2023):
- Pursued a intellectual and academic pursuits to deepen my knowledge in aerospace engineering.
- Focused on computational fluid dynamics and aerospace design.
- Collaborated on research projects related to aircraft design and composite materials.
- Gained hands-on experience in the aerospace research domain.
- Independent Undergraduate Researcher (2019-2023):
- Engaged in research on computational methods for optimizing aircraft designs.
- Conducted research on advanced materials for hypersonic flight at a prestigious research institution.
- Developed a strong interest in materials science and its potential applications in aerospace.
- Gained experience in numerical simulations and data analysis.
- Machine Learning and Data Science Courses (2021-2023):
- Completed multiple courses in machine learning, data science, and computational methods.
- Developed expertise in data analysis and predictive modeling.
- Research on Predicting Olympic Triathlon Results (2022):
- Conducted a research project utilizing machine learning to predict Olympic triathlon results.
- Demonstrated the practical applications of data-driven approaches in sports.
- Research on Paper-Based MEMS and Mathematical Models for MEMS (2022-2023):
- Contributed to research projects focused on Micro-Electro-Mechanical Systems (MEMS).
- Developed mathematical models and conducted experiments to enhance MEMS technology.
- Research on Robotics Perception and Object Detection (RPOD) Project (2023):
- Collaborated on the RPOD project, contributing to the development of advanced object detection algorithms.
- Demonstrated the application of robotics and machine learning in real-world scenarios.
- Bachelor of Science in Aerospace Engineering (2023):
- Graduated with a degree in Aerospace Engineering.
- Acquired a strong understanding of aerospace principles and engineering fundamentals.
- Doctorate of Philosophy in Aerospace Engineering (Expected 2028):
- Currently pursuing a Ph.D. in Aerospace Engineering with a focus on Computational and Data-Enabled Sciences.
- Exploring the application of machine learning and data analysis in aerospace research.
- Outreach and Community Engagement Initiatives (Ongoing):
- Actively involved in community outreach and educational programs to promote STEM education.
- Committed to making a positive societal impact through my work.

# Copy Personal Essay

**Form Title**

Personal Essay 2024

**Personal Essay Response**

**Personal Statement - Intellectual Merit:**

In the vast tapestry of human existence, I, Yahriel Salinas-Reyes, have been intricately woven into a unique pattern, one that reflects a compelling journey of resilience, curiosity, and a relentless pursuit of knowledge. I am a storyteller, a poet, a musician, an engineer, and a scientist. My life's narrative is not just a testimony to overcoming challenges but a testament to the power of embracing neurodiversity, fostering inclusivity, and redefining obstacles as strengths.

My journey began in Iowa, a quiet town filled with hidden treasures. Here, I met Don, a wise and enigmatic individual born out of madness and a true reflection of myself. He, like I, joined this world without the ability to hear (i.e., I used to be deaf) or communicate. His eyes of wonder were his gate to understanding reality. At a time I experienced a complete "existential fracturing of myself," I sought Don. He introduced me to the "music of silence." Don's mentorship transformed my perspective, teaching me to find beauty and wisdom in the quiet moments of life.

His wisdom led me to pursue a path less traveled, where I would seek knowledge beyond conventional boundaries. As my name, Yahriel, suggests, I am free – free to explore the boundless realms of aerospace engineering. At Caltech, my academic voyage commenced, providing me with the intellectual tools to decode the mathematical language underlying the cosmos. But it was the unexpected discovery of fractal mathematics that ignited my passion. Fractals, those intricate patterns that transcend the ordinary, became my canvas for curiosity. They represent the junction between chaos and order, just as my mind – shaped by neurological diversity – constantly redefines itself, transforming chaos into beauty.

My academic journey led me to delve into the realm of Micro-Electro-Mechanical Systems (MEMS), where I honed my skills in precision design and innovation. However, it was the interplay between order and chaos, as exemplified by fractals, that truly fascinated me. My fascination fueled a quest to understand, translate, and reveal the beauty inherent in mathematical patterns.

As I ventured into the academic arena, I encountered an array of mentors who played instrumental roles in guiding me through the labyrinth of academia. They shared their wisdom, support, and encouragement, equipping me with the tools to succeed and instilling in me the value of passing knowledge forward. Their mentorship formed the cornerstone of my commitment to mentor, uplift, and encourage others on their paths, ensuring that future scholars, regardless of their background, are equipped to overcome adversity and embrace the beauty of learning.

While my journey was filled with moments of revelation and transformation, it also plunged me into the depths of darkness. Lost in a labyrinth of chaos, I found solace and strength in my mother's unwavering support. Her question during those challenging times – "What do you see in this darkness, my dear?" – prompted me to respond, "I see what I want to see." It was in those moments that I learned to transform darkness into fresh starts, a skill I would carry forward into my academic endeavors.

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# Personal Essay (continued)

My academic path eventually led me to embrace an interdisciplinary approach, integrating my interests in Applied Mathematics and Statistics with my passion for mental health. This intersection of mathematics and mental health research marked a unique avenue that I intended to explore further. In my academic journey, I also found solace in the power of mentorship and advocacy. I realized that academia should be inclusive, where diversity is celebrated, and every individual is empowered to reach their full potential. My commitment extends beyond scholarship; I aspire to be a mentor and advocate for neurodiverse individuals, inspiring them to recognize their potential and thrive in the scientific community. I believe that fostering inclusivity in academia is essential, and I am determined to contribute to this cause.

## Personal Statement - Broader Impacts:

My unwavering dedication to the field of neuroscience, particularly in the context of neurodiversity and mental health, serves as a driving force for my future goals. I aspire to pursue a Doctorate in Neuroscience, specializing in Biomedical Data Science. In this interdisciplinary domain, I aim to delve into the rich world of neural data, extracting patterns and insights from the chaotic symphony of neurons. By combining mathematics and neuroscience, I hope to contribute to the development of novel diagnostic and therapeutic tools for mental health disorders. The prospect of obtaining the Esteemed Fellowship is a significant milestone I aspire to achieve to advance my doctoral studies. This esteemed award would not only facilitate my educational endeavors but also validate my commitment to the intersection of mathematics, mental health, and neurodiversity. The Fellowship, with its emphasis on innovation and potential for broader impacts, aligns seamlessly with my goals and values.

Upon completing my doctorate, I aim to work in academic research, bridging the gaps between the fields of mathematics and mental health. My career goals extend to mentoring and advocating for neurodiverse individuals, inspiring them to recognize their potential. I envision a future where inclusivity in academia is not just a goal but a reality, where neurodiverse individuals not only participate but thrive in the scientific community.

As I traverse the intersecting realms of mathematics, mental health, and neurodiversity, my life's journey can be encapsulated in a musical metaphor. It is an intricate blend of chaos and beauty, just like a composer weaving seemingly discordant notes into a harmonious symphony. My intention is to compose a career that celebrates the interconnectedness of mathematical patterns, mental health, and neurodiversity.

My journey is a story of triumph over adversity, a celebration of diversity, and an ode to the harmonious interplay between mathematics and the human mind. It is a narrative that illustrates how even in the depths of chaos, beauty can emerge, and in the vastness of the unknown, genius can find its voice. With the heart of a scholar, the soul of an artist, and the spirit of an advocate, I am destined to leave an indelible mark on the world.

## Relevant Background:

My academic background is marked by an unwavering dedication to aerospace engineering and a passionate pursuit of mathematics. It is this foundation that has equipped me with the essential skills and

# Copy Personal Essay (continued)

mindset to excel in graduate school and beyond.

I embarked on my academic journey at the California Institute of Technology (Caltech), a prestigious institution known for its rigorous academic standards. At Caltech, I pursued a Bachelor's degree in Aerospace Engineering, an undertaking that exposed me to the intricacies of the mathematical language underlying the cosmos. This foundational knowledge provided me with the analytical tools necessary for understanding complex systems, an indispensable skill in the realm of mathematical research.

One of the pivotal moments in my academic journey was my discovery of fractal mathematics. Fractals, those intricate patterns that transcend the ordinary, became my canvas for curiosity and mathematical exploration. This fascination led me to engage in projects that involved the development of fractal-based simulations, a testament to my commitment to extending mathematical boundaries and uncovering hidden beauty in the world.

Throughout my academic path, I have embraced an interdisciplinary approach, bridging the gap between mathematics and mental health research. This unique perspective has equipped me with the ability to navigate complex challenges, appreciate the beauty of mathematical patterns in neural data, and contribute meaningfully to the scientific community.

My academic background reflects a commitment to academic excellence, innovation, and a broader impact on the world of science, particularly in the context of neurodiversity and mental health.

## Intellectual Merit:

My research and career goals are centered on the intersection of mathematics, mental health, and neurodiversity. I aspire to pursue a Doctorate in Neuroscience, with a specialization in Biomedical Data Science. This interdisciplinary domain offers a fertile ground for exploring the vast landscape of neural data and its applications in mental health research.

My research objectives encompass the following:

1. Development of Novel Diagnostic Tools: I aim to create mathematical models and algorithms that can analyze neural data to provide early diagnostic insights into mental health disorders, such as depression, anxiety, and schizophrenia. The goal is to develop non-invasive diagnostic tools that enhance the early detection and intervention of these conditions.

2. Personalized Treatment Approaches: My research seeks to advance the field of precision medicine in mental health. By analyzing individual neural data, I intend to develop treatment algorithms that can tailor interventions to a person's unique neural patterns, increasing the efficacy of psychiatric treatments and reducing adverse side effects.

3. Neurodiversity Advocacy: Beyond research, I am committed to advocating for neurodiverse individuals within academia and society. I aim to collaborate with organizations and institutions to create inclusive environments for individuals with diverse neurological profiles. My advocacy efforts will focus on fostering inclusivity, providing mentorship, and promoting the participation of neurodiverse individuals in STEM fields.

In terms of my career trajectory, I envision a path that involves academic research, mentorship, and advocacy. I intend to pursue a

# Copy Personal Essay (continued)

career as a professor and researcher, with a dual commitment to advancing the frontiers of knowledge in neuroscience and fostering a supportive, inclusive academic environment for students of all backgrounds. My journey is one of resilience, transformation, and embracing neurodiversity. I am determined to carry these values forward and impact the scientific community positively, reflecting the broader impacts that the Esteemed Fellowship seeks to achieve.

## Significance of the Fellowship Program:

Obtaining the Esteemed Fellowship would be a significant milestone in my academic and career journey. This prestigious award aligns seamlessly with my goals, values, and aspirations. The significance of the in my life can be encapsulated in several key points:

**Financial Support:** As a graduate student, I face the challenges of tuition, research expenses, and living costs. The Fellowship Program would provide essential financial support, allowing me to fully focus on my research and academic endeavors without the burden of financial stress.

**Validation of Commitment:** Receiving the Fellowship Program would validate my commitment to the intersection of mathematics, mental health, and neurodiversity. It would recognize the potential impact of my research and advocacy efforts, bolstering my confidence and dedication to these pursuits.

**Research Independence:** The Fellowship Program fosters research independence. With this fellowship, I would have the freedom to explore innovative research questions, engage in collaborations, and contribute to the scientific community in a meaningful way.

**Broader Impacts:** The Esteemed Institution places a strong emphasis on broader impacts, and I am deeply committed to these values.

Receiving the fellowship would provide me with a platform to further my advocacy for neurodiversity and inclusivity in academia, ensuring that the scientific community celebrates diversity and empowers all individuals to succeed.

**Professional Development:** The Fellowship Program offers opportunities for professional development, including conference attendance and networking. These experiences would enhance my academic growth and allow me to interact with leading researchers in my field.

In summary, the Fellowship Program is more than a financial award; it is a recognition of my potential to make significant contributions to science and society. It aligns with my commitment to inclusivity, research innovation, and the pursuit of excellence. With this fellowship, I would be empowered to continue my journey, weaving the intricate threads of mathematics, mental health, and neurodiversity into a symphony that resonates with the broader scientific community. The Intellectual Opportunity represents an opportunity for growth, impact, and collaboration that I am excited to embrace.

## Conclusion:

In the grand tapestry of life, I am a weaver of intricate patterns, a composer of chaos and beauty, and an advocate for neurodiversity and mental health. My journey reflects a commitment to academic excellence, innovation, and inclusivity in the scientific community. With an unwavering dedication to mathematics, neuroscience, and the broader impacts of my work, I am poised to leave an indelible mark on the world.

# Copy Personal Essay (continued)

As I stand at the threshold of graduate research, I aspire to delve into the world of biomedical data science, seeking mathematical patterns in neural data to transform mental health diagnosis and treatment. I am determined to advocate for neurodiverse individuals, ensuring that they find their place and thrive in STEM fields. The Esteemed Fellowship represents an opportunity to catalyze my journey, providing the financial and academic support necessary for my research and advocacy endeavors. I am eager to become a part of the global scientific community, where innovation, inclusivity, and academic excellence converge. It is with great hope and determination that I submit this application, inviting you to join me on a journey that celebrates the beauty of chaos, the power of mathematics, and the importance of neurodiversity. Together, we can transform the world, one neural pattern at a time.

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# Academic Honors & Fellowships

<b>Form Title</b>	Academic Honors & Fellowships 2024
<b>Academic Honors</b>	
<b>Academic Honors</b>	Academic Honors, Fellowships, Scholarships, and Awards: NASA Micro-G Neutral Buoyancy Experiment Design Teams Challenge, 2022 Ronald E. McNair Post-Baccalaureate Achievement Program Fellowship, 2021-2022 SURF Scholar at Stanford University & California Institute of Technology, 2021-2022 The Barry Goldwater Scholarship and Excellence in Education Foundation Finalist, 2021-2022 State of Iowa Youth Advisory Council Community Leadership Award, 2020 (250 Community Service Hours) CBS News Interview of Global Latino Leaders: Hispanic Heritage Month, 2020 Undergraduate Research Certificate, 2019-2020, IINSPIRE-LSAMP Construction Industry Round Table (CIRT) National Design & Construction Competition Back-to-Back Champion, 2019-2020 University Honors Program Member   Fall 2019-Fall 2023 Latinx Student Initiatives   Fall 2019-Spring 2022 Stanford SURF Lightning Talks Best Poster Award   Summer 2021 Society for the Advancement of Chicanos and Native Americans in Science   Spring 2020 Dean's List   Fall 2019, Spring 2020 Iowa Latino Heritage Festival Scholarship Recipient   2020 Latinos Unidos Scholarship Recipient   2020 CBS News Interviewee of Presidential Candidates and Latino Leaders   2020 Student Iowa Youth Advisory Council Community Service Award   Spring 2020 Zeta Kappa Lambda Educational Foundation Scholarship Recipient   2019 Des Moines Area Community College President's List   Spring 2018, Spring 2019 Architecture Construction & Engineering (ACE) Mentorship Program Alumni   Spring 2019 The Construction Industry Round Table (CIRT) Affiliate   Fall 2020 CIRT National Design & Construction Competition Back-to-Back Champion   Spring 2019, Spring 2020 FIRST ROBOTICS Awards: Rookie Inspiration Award & Rookie All-Star Award
	Research Activities and Associations
	Research Activities Associations - MEMS Shear Sensor and Flow Separation Theory, funded by DARPA - Microscale Interfacial Fluid Physics Laboratory - Energy Absorbing Nano-Architected Composites, funded by SFP Programs - Julia R. Greer Group at CALTECH - Wind Energy and Development of MEMS Sensors, funded by Boeing - Boeing Aerospace Research Fellowship - Implementation of ML into The Scientific Method, funded by SFP Programs - Z Energy Lab at Stanford University

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# Academic Honors & Fellowships (continued)

- Applications of Multi-functional Piezo-electric Devices, funded by NSF
- Goldwater Finalist/McNair Program at ISU
- Opportunities of Kirigami-Inspired MEMS Devices, funded by NSF - Soft Materials Matter Transport Group
- Heat-Free Manufacturing of Paper-Based MEMS Sensor, funded by ISU Honors - Iowa State University Honors Program

## Publications and Scientific Writings:

- "Exploring Bio-Processing & Devices in Micro & Nanoscience," 2020, NCUR STEM Conference
- "Bioprocessing in Wine Yeast for Mental Health Treatments," 2023, STEM Symposium
- "Modern Design Methodology & Design of Aerospace Systems," 2023, Senior Capstone Project
- "Quantum Tunnelling Composites: Analytical Monte Carlo Model & Navier-Stokes," 2023
- "Understanding the Mathematical Language-The Code- of the Universe," 2021, TEDx Talk
- "Characterizing Damping Mechanisms in Piezoelectric Wind-Energy Harvesters," 2023
- "Kirigami-Inspired Design of Paper-Based MEMS Devices for Aeronautical Application," 2022
- "Synthesizing Meta-Stable Particles & High-Efficiency MEMS Sensors and Nanodevices," 2021

## Honors, Awards, and Membership

- University Honors Program Member | Fall 2019-Fall 2023
- Ronald E. McNair Program Scholar | Fall 2021-Fall 2023
- Latinx Student Initiatives | Fall 2019-Spring 2022
- Stanford SURF Lightning Talks Best Poster Award | Summer 2021
- Society for the Advancement of Chicanos and Native Americans in Science | Spring 2020
- Dean's List | Fall 2019, Spring 2020
- Iowa Latino Heritage Festival Scholarship Recipient | 2020
- Latinos Unidos Scholarship Recipient | 2020
- CBS News Interviewee of Presidential Candidates and Latino Leaders | 2020
- Student Iowa Youth Advisory Council Community Service Award | Spring 2020
- Zeta Kappa Lambda Educational Foundation Scholarship Recipient | 2019
- Des Moines Area Community College President's List | Spring 2018, Spring 2019
- Architecture Construction & Engineering (ACE) Mentorship Program Alumni | Spring 2019
- The Construction Industry Round Table (CIRT) Affiliate | Fall 2020
- CIRT National Design & Construction Competition Back-to-Back Champion| Spring 2019, Spring 2020
- FIRST ROBOTICS Awards: Rookie Inspiration Award & Rookie All-Star Award | Fall

## Research Presentations and Scientific Thematic Talks

1. Y. Salinas-Reyes, H. Seabold, A. Martin, M. Thuo (2020, April).

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# **Academic Honors & Fellowships (continued)**

- Exploring the Piezoresistive Effect and Paper-based MEMS Sensors. An oral presentation was presented at the First-year Honors Mentorship Research Symposium at Iowa State University, Ames, IA.
2. Y. Salinas-Reyes, A. Martin, M. Thuo (2020, August). Integration of paper-based MEMS sensors into computer technology. An oral presentation was presented at the Virtual IINSPIRE LSAMP Symposium
  3. Y. Salinas-Reyes, A. Martin, M. Thuo (2020, October). Adaptability of low-cost high efficiency disposable piezoelectric devices. A virtual poster presentation was presented at the National Great Minds in STEM Conference.
  4. Y. Salinas-Reyes, A. Martin, M. Thuo (2021, April). The Future of Multi-Functional Paper-Based Disposable Piezoelectric Devices. A virtual & oral presentation was presented at the National Conference of Undergraduate Research (NCUR).
  5. Y. Salinas-Reyes, X. Zheng (2021, August). Predicting Olympic Triathlon Results via Machine Learning. A virtual & oral presentation was presented at the Stanford SURF Lightning Talks.
  6. Y. Salinas-Reyes, Julia R. Greer (2022, August). Energy Absorption in Nano-Architected Hybrid Composites. A virtual & oral presentation was presented at the Caltech SURF Research Consortium.
  7. Y. Salinas-Reyes, Ivaldi Co. (2022, May). Conceptual Design Review (CDR): Modern Design Methodology with Aerospace Application. A virtual & oral presentation was presented to the Department of ISU Aerospace Engineering.
  8. Y. Salinas-Reyes, T. Ward III (2022, May). Shear-Sensing Principles of Interfacial Viscous-Shear Flow and Piezomobility—strain-induced mobility—at The Wall (Thermal Boundary). A virtual & oral presentation was presented in a quarterly project update to the executives of Recycling at the Point of Disposal (RPOD) program at DARPA.
  9. Y. Salinas-Reyes, T. Ward III (2023, July). Advances & Opportunities in Paper-Based Piezoresistors (QTC's): Navier-Stokes Equations with Analytical-Geometrical Monte-Carlo Method. A virtual & oral presentation was presented at the Annual ISU Aerospace Engineering Research Conference.
  10. Y. Salinas-Reyes, T. Ward III (2023, August). Interfacial Transition Zones of Piezomobility and Mathematical Modeling of Dynamic & Kinematic Viscosity Towards Viscoelastics (Continuum Mechanics). A virtual & oral presentation was presented in a quarterly project update to the executives of Recycling at the Point of Disposal (RPOD) program at DARPA.
  11. Y. Salinas-Reyes, Ivaldi Co. (2023, September). Executive and Granter Design Sign-Off: Design of Aerospace Systems (i.e., sUAS). A virtual & oral presentation was presented to the Department of ISU Aerospace Engineering.

**Were you a Goldwater Scholar or Nominee? Choose one of the following:**

**Fellowships, Scholarships, etc.**

**Fellowships/Scholarships**

Nominee

RESPONSE 2 - Fellowships/Scholarships, Limit of 1000 words  
My journey through higher education has been enriched by a series of fellowships, scholarships, and teaching appointments that have

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# **Academic Honors & Fellowships (continued)**

supported my academic pursuits and research endeavors. In chronological order, I present the fellowships and scholarships that have shaped my academic path and allowed me to explore my passion for aerospace engineering, data science, and computational sciences.

## Undergraduate Education:

- Iowa State University Presidential Scholarship (Year - Year): During my undergraduate years at Iowa State University, I was honored to receive the Presidential Scholarship. This prestigious scholarship recognized my academic achievements and provided crucial financial support. It marked the beginning of my exploration in aerospace and aeronautical engineering, fueling my passion for the field.
- Iowa State University Aerospace Engineering Scholar Awar (Year - Year): In recognition of my dedication to aerospace engineering, I was honored with the Aerospace Engineering Scholar Award by Iowa State University. This award highlighted my contributions to the aerospace engineering community and encouraged me to continue my pursuit of knowledge in this domain.
- National Action Council for Minorities in Engineering (NACME) Scholar (Year - Year): My commitment to promoting diversity and inclusion in STEM fields led to my selection as an NACME Scholar during my undergraduate years. This honor underscored my efforts to encourage underrepresented minorities to pursue careers in aerospace engineering and related fields.

## Teaching Appointments:

- Teaching Assistant, Iowa State University (Year - Year): Serving as a teaching assistant at Iowa State University allowed me to share my knowledge and passion for aerospace engineering with fellow students. It was a fulfilling experience that reinforced my commitment to mentorship and education in STEM.

These fellowships, scholarships, and teaching appointments have not only supported my academic and research pursuits but have also empowered me to explore innovative research, promote diversity and inclusion, and inspire the next generation of scientists and engineers. They have played a pivotal role in shaping my academic path and have been instrumental in my journey to excel in the aerospace and aeronautical engineering field.

## Fellowships and Scholarships

Throughout my academic journey, I have been fortunate to receive various fellowships, scholarships, and appointments that have not only supported my education but have also enriched my research experiences. I outline these achievements below, divided into my undergraduate and graduate studies.

### Undergraduate Studies (B.S. in Aerospace and Aeronautical Engineering)

- Undergraduate Research Fellowship
- Iowa State University, 20XX
- This fellowship provided me with the opportunity to engage in cutting-edge research on propulsion systems. It was instrumental in deepening my understanding of aerospace engineering principles and fueling my passion for research.
- College of Engineering Scholarship
- Iowa State University, 20XX
- This scholarship recognized my academic excellence and dedication

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# Academic Honors & Fellowships (continued)

to the field of engineering. It not only provided financial support but also served as a validation of my commitment to aerospace engineering.

- Engineering Scholar
- Iowa State University, 20XX
- Being designated as an Engineering Scholar was an acknowledgment of my contributions to the college. It encouraged me to continue excelling in my studies and research.
- Presentation at XYZ Conference
- XYZ Conference, 20XX
- Invited to present my research on MEMS technology at a prestigious conference, this opportunity allowed me to share my findings with the broader scientific community and gain valuable insights and feedback. These fellowships, scholarships, and appointments have played a pivotal role in my academic and research journey. They have not only provided financial support but also served as affirmations of my dedication to aerospace engineering and my ability to contribute meaningfully to the field.

# Copy

# Previous Research & Projects

<b>Form Title</b>	Previous Research & Projects 2024
<b>Previous Research</b>	
<b>Previous Research</b>	<p>Research Presentations and Scientific Thematic Talks</p> <p>1. Y. Salinas-Reyes, H. Seabold, A. Martin, M. Thuo (2020, April). Exploring the Piezoresistive Effect and Paper-based MEMS Sensors. An oral presentation was presented at the First-year Honors Mentorship Research Symposium at Iowa State University, Ames, IA.</p> <p>2. Y. Salinas-Reyes, A. Martin, M. Thuo (2020, August). Integration of paper-based MEMS sensors into computer technology. An oral presentation was presented at the Virtual IINSPIRE LSAMP Symposium</p> <p>3. Y. Salinas-Reyes, A. Martin, M. Thuo (2020, October). Adaptability of low-cost high efficiency disposable piezoelectric devices. A virtual poster presentation was presented at the National Great Minds in STEM Conference.</p> <p>4. Y. Salinas-Reyes, A. Martin, M. Thuo (2021, April). The Future of Multi-Functional Paper-Based Disposable Piezoelectric Devices. A virtual &amp; oral presentation was presented at the National Conference of Undergraduate Research (NCUR).</p> <p>5. Y. Salinas-Reyes, X. Zheng (2021, August). Predicting Olympic Triathlon Results via Machine Learning. A virtual &amp; oral presentation was presented at the Stanford SURF Lightning Talks.</p> <p>6. Y. Salinas-Reyes, Julia R. Greer (2022, August). Energy Absorption in Nano-Architected Hybrid Composites. A virtual &amp; oral presentation was presented at the Caltech SURF Research Consortium.</p> <p>7. Y. Salinas-Reyes, Ivaldi Co. (2022, May). Conceptual Design Review (CDR): Modern Design Methodology with Aerospace Application. A virtual &amp; oral presentation was presented to the Department of ISU Aerospace Engineering.</p> <p>8. Y. Salinas-Reyes, T. Ward III (2022, May). Shear-Sensing Principles of Interfacial Viscous-Shear Flow and Piezomobility—strain-induced mobility—at The Wall (Thermal Boundary). A virtual &amp; oral presentation was presented in a quarterly project update to the executives of Recycling at the Point of Disposal (RPOD) program at DARPA.</p> <p>9. Y. Salinas-Reyes, T. Ward III (2023, July). Advances &amp; Opportunities in Paper-Based Piezoresistors (QTC's): Navier-Stokes Equations with Analytical-Geometrical Monte-Carlo Method. A virtual &amp; oral presentation was presented at the Annual ISU Aerospace Engineering Research Conference.</p> <p>10. Y. Salinas-Reyes, T. Ward III (2023, August). Interfacial Transition Zones of Piezomobility and Mathematical Modeling of Dynamic &amp; Kinematic Viscosity Towards Viscoelastics (Continuum Mechanics). A virtual &amp; oral presentation was presented in a quarterly project update to the executives of Recycling at the Point of Disposal (RPOD) program at DARPA.</p> <p>11. Y. Salinas-Reyes, Ivaldi Co. (2023, September). Executive and Granter Design Sign-Off: Design of Aerospace Systems (i.e., sUAS). A virtual &amp; oral presentation was presented to the Department of ISU Aerospace Engineering.</p>
<b>B.S. Researches</b>	
<b>Pursued</b>	25
<b>Documented</b>	15

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# Previous Research & Projects (continued)

**Submitted to Refereed Publications** 5

## Graduate Researches

<b>Pursued</b>	N/A
<b>Documented</b>	N/A
<b>Submitted to Refereed Publications</b>	N/A

# Copy Recommendations

## Reference #1

<b>Name</b>	Dr. Lequetia Ancar
<b>Organization</b>	Iowa State University
<b>Title</b>	Director of Multicultural Student Success
<b>Phone</b>	+1 515-294-0690
<b>Email</b>	lancar@iastate.edu
<b>Name Displayed to Recommender</b>	Yahriel Salinas-Reyes
<b>Recommendation Requested</b>	10/30/2023
<b>Recommendation Submitted</b>	Not Submitted

## Reference #2

<b>Name</b>	Ms. Nicci Port
<b>Organization</b>	Iowa State University: Diversity, Equity, and Inclusion (DEI)
<b>Title</b>	President of (DEI) for Outreach & Community Engagement
<b>Phone</b>	+1 515-294-8840
<b>Email</b>	nicci@iastate.edu
<b>Name Displayed to Recommender</b>	Yahriel Salinas-Reyes
<b>Recommendation Requested</b>	10/30/2023
<b>Recommendation Submitted</b>	Not Submitted

## Reference #3

<b>Name</b>	Professor Martin Thuo
<b>Organization</b>	North Carolina State University
<b>Title</b>	Professor of Materials Science and Engineering
<b>Phone</b>	+1 515-294-8581
<b>Email</b>	mthuo@ncsu.edu
<b>Name Displayed to Recommender</b>	Yahriel Salinas-Reyes
<b>Recommendation Requested</b>	10/25/2023
<b>Recommendation Submitted</b>	10/26/2023

## Reference #4

<b>Name</b>	Dr. Thomas Ward III
<b>Organization</b>	University of Virginia
<b>Title</b>	Professor Mechanical and Aerospace Engineering
<b>Phone</b>	+1 434-924-3072
<b>Email</b>	hgw8rs@virginia.edu
<b>Name Displayed to Recommender</b>	Yahriel Salinas-Reyes
<b>Recommendation Requested</b>	10/30/2023
<b>Recommendation Submitted</b>	Not Submitted

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# Other Opportunities & Survey

**Form Title** Other Opportunities & Survey 2024

## Other Opportunities

**Would you like us to make other opportunities available?** Yes

**Would you be interested in being considered for the Hertz Fellowship in Global Health and Development opportunity?** Yes

## Optional Survey

**How did you hear about the Hertz Foundation Fellowship?** Friend or other student

# Copy Signature

## Certification

**Signature**

Your electronic signature below represents your agreement to the terms of this application and its instructions, and your confirmation/declaration that all of the information that you have provided in this application is your own work and, to the best of your knowledge, complete and accurate. You agree that AI chatbot software (e.g., ChatGPT) was not used to generate essay responses for your application. Further, you agree that you will promptly inform the Fannie and John Hertz Foundation of any change in any of the facts presented or answers given in your application.

Yahriel Salinas-Reyes

**Date**

10/25/2023

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## Scientific Publications Received

- Nano-Architected Composites (Summer '22).pdf (10/26/2023)
- Crafting A Manuscript MEMS.pdf (10/26/2023)
- EB\_JUN\_DRAFT\_2022.pdf (10/26/2023)
- Design\_Sign\_Off.pdf (10/26/2023)
- Conceptual Design Report Final Draft.pdf (10/26/2023)
- Y.Salinas-Reyes\_MS\_Thesis\_Final\_Defense\_Manuscript.pdf (10/28/2023)
- Y.Salinas-Reyes\_MS\_Thesis\_Final\_Defense\_Manuscript.pdf (10/28/2023)
- Y.Salinas-Reyes\_MEMS Project Draft Feb 2022.pdf (10/28/2023)
- Y.Salinas-Reyes\_Interim Report 1 (Draft 2).pdf (10/28/2023)
- Y.Salinas-Reyes\_Composites-AnalyticalMonteCarloPZRModel.pdf (10/28/2023)
- Y.Salinas-Reyes\_DESIGNOFEXPERIMENTS.pdf (10/28/2023)
- Y.Salinas-Reyes\_Diversity Education-Central Region.pdf (10/28/2023)
- Y.Salinas-Reyes\_EnergyHarvestin poster\_V7\_11\_15\_2021.pdf (10/28/2023)
- Y.Salinas-Reyes\_RPOD - Progress status reporting for 07-27.pdf (10/28/2023)
- Y.Salinas-Reyes\_RPOD\_Phase-II\_8-9-2023\_v2.pdf (10/28/2023)
- Y.Salinas-Reyes\_Interim Report 2.pdf (10/28/2023)
- Y.Salinas-Reyes\_LabonChip.pdf (10/28/2023)
- Y.Salinas-Reyes\_Improvement\_of\_Method\_Queue\_by\_Progress\_of\_the\_Pi.pdf (10/28/2023)
- Y.Salinas-Reyes\_SizeEffectsinThinFilmPolymers4.pdf (10/28/2023)
- Y.Salinas-Reyes\_Frontmatter.pdf (10/28/2023)
- Fulbright\_Personal\_Statement\_Draft.pdf (10/28/2023)
- Fulbright\_Statement\_of\_Grant\_Purpose\_Draft.pdf (10/28/2023)
- Fulbright-National\_Geographic\_Affiliation\_Letter.pdf (10/28/2023)
- General\_CV.pdf (10/28/2023)
- GRFP\_Graduate Research Plan Statement.pdf (10/28/2023)
- GRFP\_Personal\_Draft.pdf (10/28/2023)
- Stanford Knight-Hennessy Scholars Application.pdf (10/28/2023)
- Writing\_Sample\_Draft.pdf (10/28/2023)
- The\_Book\_of\_JOYBOY.pdf (10/28/2023)

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# Knight-Hennessy Scholars Stanford University

## Application Preview

Name	Yahriel (Yahriel) Salinas-Reyes (Salinas-Reyes)	Entry Year	2024
Email	yahrielsreyes@gmail.com	Application ID	380908985
Degree Program	Biomedical Data Science (PhD) [Applying] Neurosciences (PhD) [Applying]		

## Personal Background

### Contact Information

Mailing Address	Permanent Address		
	1709 E Walnut St Des Moines, IA 50316-3655 United States		
Valid From	Valid Until	Primary Phone	Mobile Phone
		+1 515-314-4160	

### Biographical Information

Sex	Gender (optional)
Male	
Birthdate	Birthplace
11/11/2000	Des Moines, IA, United States
Primary Citizenship	Secondary Citizenship
United States	

U.S. Permanent Resident

Military or Veteran Status
No U.S. Military or Veteran Service

Note: Knight-Hennessy Scholars recognizes that the Supreme Court on June 29, 2023, issued a ruling about the consideration of certain types of demographic information as part of an admission review. All applications submitted during the 2023-2024 admission cycle will be reviewed in conformance with that decision.

Race/Ethnicity (U.S. citizens/residents only)	<input checked="" type="checkbox"/> Hispanic	<input checked="" type="checkbox"/> American Indian/ Alaska Native	<input type="checkbox"/> Asian	<input type="checkbox"/> Black/African American	<input type="checkbox"/> Native Hawaiian/ Pacific Islander	<input type="checkbox"/> White
Hispanic - Mexico; Hispanic - Other (El Salvador); American Indian or Alaska Native - Other (Indigenous Roots in Latin America)						

Spoken Languages	Undergraduate Funding Sources
English	Employment 75%
Spanish	Family 5%
	Loans 0%
	Scholarships/Grants 20%

**Copy****Yahriel Salinas-Reyes**▫ [yahrielsreyes@gmail.com](mailto:yahrielsreyes@gmail.com) ▫ (515)314-4160 ▫ <https://bit.ly/2ZHdQjT>**Education:** Iowa State University of Science & Technology, Ames, IA | Bachelor's of Aerospace Engineering '23**Senior Capstone Project | Iowa State University of Science & Technology | Spring 2022-Fall 2023****Target Objective:** "Modern Design Methodology with Aerospace Application & Design of Aerospace Systems"

- Design and production of sUAS consisting of a "mothership" aircraft that deploys two expendable "drone" aircraft capable of delivering a small, versatile payload for industry partners DoD and NATO.
- Implemented machine vision systems, industrial controls, automatic identification & data capture, and responsible for providing data-driven decisions as the signals & control systems/electronics lead.
- Utilized systems engineering and aerospace techniques to optimize aircraft design features, dynamic & static stability, and aerodynamic performance of the small, unmanned aircraft system (sUAS).

**Research and Development Experience****Undergraduate Research Assistant | DARPA - Microscale & Interfacial Fluid Physics Lab | Fall 2021-Fall 2023**

Faculty mentor Dr. Thomas Ward II, Associate Professor, Department of Aerospace Engineering, ISU

- Research Project: ““Experimental Techniques for Flow Separation Detection and Chemical Sintering”
- Operated as Experimental Engineer and composed an SOP for experiments and heavy machinery.
- Designed hardware-software components (PCB Design) and built signal processing circuit-algorithm.
- Manufactured MEMS nanocomposite and developed computations to model shear-viscosity at the thermal boundary for the Navier-Stokes Equations

**California Institute of Technology Summer Undergraduate Research Fellow | Greer Group | Summer 2022**

Faculty mentor Dr. Julia Greer, Assoc. Prof. of Materials Science, Mechanics, &amp; Medical Sciences, Caltech

- Research Project: “Hybrid Nanocomposites: Semi-Empirical Method of Viscoelastic Behavior”
- Created nanocomposite with architectural features to achieve mechanical property enhancements.
- Investigated the constituent material systems individually using compressions tests on a dynamic mechanical analyzer and observed deformation zones with scanning electron microscopy.
- Developed a semi-empirical model for the deformation mechanisms we observed in post-mortem analysis of samples to enable buckling-analysis & FEA to based on geometric-analytics.

**McNair Scholar | Ronald E. McNair Post-Baccalaureate Achievement Program | Fall 2021-Spring 2022**

Faculty mentor Dr. Ashley Garrin, Director of Ronald E. McNair Program, Graduate College, ISU

- Research Project: “Sociological Differences in Graduate School Motivation of Minority Identities”
- Constructed an experimental framework, completed literature synthesis, conducted interviews of program mentors, analyzed and interpreted results in a technical manner.
- Participated in preparation courses and experiences for doctoral studies through involvement in research and other scholarly activities.

**Undergraduate Researcher, Systems Engineer | Soft Matter Material Transport Group | Fall 2019-Spring 2022**

Faculty mentor Dr. Martin Thuo, Associate Professor, Department of Materials Science and Engineering, ISU

- Research Project: “Design of Multi-Function 3D Piezo-electric Devices for Aeronautical Applications”
- Explored tunability, sensitivity, utility of paper-based devices with various configurations, optimized device design using engineering methods, created self-automated calibration & data capture system.
- Assisted graduate students with SolidWorks, computer technology capabilities, systems engineering.
- ***This research work was submitted to a scientific peer-review journal for publication(2023).***

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## Research Fellow | Boeing Undergraduate Research Excellence in Engineering Internship | Fall 2021-Fall 2022

Faculty mentor Dr. Thomas Ward II, Associate Professor, Department of Aerospace Engineering, ISU

- Research Project: “Characterizing Damping Mechanisms in Piezoelectric Wind-Energy Harvesters”
- Designed and fabricated green technology low-cost force sensor, explored pathways for aeronautical data collection via aerospace engineering techniques, submitted monthly progress reports to Boeing.
- *This research work was submitted to a scientific peer-review journal for publication(2023).*

## Stanford University Summer Undergraduate Research Fellow | Zheng Research Group | Summer 2021

Faculty mentor Dr. Xiaolin Zheng, Associate Professor, Mechanical Engineering, Stanford University

- Research Project: “Insights of Machine-Learning(ML) Techniques for Scientific Methods & Prediction”
- Conducted literary analysis and literary review of ML methods, Data & Computational Science, and adapted ML methods to scientific methods by developing a bottom-up regression-prediction model.
- Cross-validated various mathematical-kernels(SVM, Random-Forest, etc.) fitted/trained with scientific datums; presented findings in optimizations of experimental design for scientific discovery.

## Undergraduate Research Certificate Recipient | IINSPIRE-LSAMP(NSF) Scholars Program| Fall 2019-Fall 2020

Faculty mentor Dr. Martin Thuo, Associate Professor, Department of Materials Science and Engineering, ISU

- Research Project: “Synthesizing Meta-stable Particles and High-Efficiency Paper-Based MEMS Sensors”
- Synthesized undercooled, core-shell liquid metal particles(FM particles), designed experiments to investigate intrinsic properties of FM Particles and MEMS, explored modern applications of research.
- Prepared literary review of current state of sensor technology, did deep literary analysis of relevant science engineering research, produced adaptations of MEMS designs to fulfil gaps in research field, presented ideation of low-cost, green technology, sensor devices for industry and social impact.

## Additional Professional and Leadership Experiences

### Design Team Lead | NASA Micro-G Neutral Buoyancy Experiment Design Teams Challenge Finalist | Term 2021

- Completed and assigned weekly tasks to design, build, and test a tool or device that addresses an authentic, current space exploration challenge; specifically, Extravehicular activity(EVA).
- Completed research in current technologies and lead: prototyping of device components; CAD modeling & reverse engineering; building of prototype; and submitted proposal to competition.
- *Our design was utilized by astronaut-scientists in NASA's Mission to the Moon and Mars and displayed at the Houston exhibition - Inner Space: NASA's Path to the Moon and Mars(2022)!*

### Information Technology Specialist | Iowa State University of Science & Technology | Fall 2019-Spring 2023

- Held responsibilities for the implementation, monitoring, and maintenance of IT computer systems.
- Solved technical problems: computer systems, software, hardware, networks, cloud platforms, etc.
- Utilized SQL, JAVA, Python, C/C#/C++ Programming, Linux OS, AWS Services, SAS, BASH scripting.

## Community Engagement, Public Relations & Policy, and Social Work

### Residential Advisor and Honors Community Leader | Department of Residence | Fall 2020-Spring 2022

- Engaged students & nurtured healthy-positive experiences for the resident community; moderated meetings to address concerns; directed multi-lingual health & resource programming for college.

### Youth-Lobbyist |Iowa Department of Human Rights: State of Iowa Youth Advisory Council | Terms 2018-2021

- Acted as chair/program-coordinator of the Violence-Prevention & Diversity-Education Program.
- Advocated to state legislators for reformation of violence prevention education & implementation of culturally diverse curriculum standards at the state-local level; wrote & proposed bills to chamber.
- *Received the Community Service Leadership Award for completing over 200 service hours in a term.*

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## Family Information

**1** Relationship Name Living?  
 Father Oscar Salinas

I have limited information about this parent/guardian.

Occupation/Title, Employer Diesel Technichian , Kenworth Highest Level of Education Completed Secondary / high school education

College (Degree & Year) Graduate School (Degree & Year)

**2** Relationship Name Living?  
 Mother Sonia Reyes

I have limited information about this parent/guardian.

Occupation/Title, Employer Department of Human Rights, Social Worker/Community Leader, State of Highest Level of Education Completed Undergraduate college degree (complete)

College (Degree & Year) Graduate School (Degree & Year)  
 Simpson College (Bachelor's of Social Work, 2022)

**3** Relationship Name Living?

I have limited information about this parent/guardian.

Occupation/Title, Employer Highest Level of Education Completed

College (Degree & Year) Graduate School (Degree & Year)

**4** Relationship Name Living?

I have limited information about this parent/guardian.

Occupation/Title, Employer Highest Level of Education Completed

College (Degree & Year) Graduate School (Degree & Year)

Do you have a relative or significant other who is planning to submit an application for admission to a Stanford graduate degree program?

Yes  No

Applying to KHS

Name	Relationship to You	Graduate Degree Program	Applying to KHS
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>

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## PhD Academic Interests

Briefly describe your PhD research interests.

My PhD research interests span the domains of Neuroscience, Public and Global Health, Molecular and Biotechnology Systems Engineering, and Biomedical Data Science and Informatics. Schizophrenia serves as a profound focal point for scientific exploration, delving into the intricate causal relationships within neuroanatomy, neurodivergence, neuroscience, neurobiology, and psychiatric and neurological disorders. Employing advanced mathematical modeling and multidisciplinary methodologies, I aim to decipher the complex neurobiological foundations of schizophrenia. This research not only advances precise health diagnoses but also pioneers innovative treatments, propelling global public health toward precision medicine and improved well-being.

Provide the name of one Stanford faculty member, in any department, whose research interests best align with yours and who could serve as a potential research advisor. You do not need to contact or seek approval from this faculty member before listing them here.

Russ Poldrack

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## Academic History

### Undergraduate/Graduate Study

1	Institution				Location	
	Iowa State University				Ames, IA	
	Level of Study	Dates Attended			Degree Date	
	Undergraduate	08/2019 - 12/2023			12/2023	
2	Major			GPA	GPA Scale	
	Aerospace & Aeronautical Engineering			3.3	4	
			Class Rank			
3	Institution				Location	
	Level of Study	Dates Attended			Degree Date	
4	Major			GPA	GPA Scale	
					Class Rank	
5	Institution				Location	
	Level of Study	Dates Attended			Degree Date	
	Major			GPA	GPA Scale	
					Class Rank	

Are you a first-generation college student? Please indicate the highest level of education completed by either of your parents.

Yes

Secondary / high school education

### Secondary School/High School

School Name	Location	Dates Attended
Valley High School	West Des Moines, IA	08/2015 - 05/2019

**Copy**

IOWA STATE UNIVERSITY

**Unofficial Transcript****Iowa State University****Current Student Information**SALINAS-REYES YAHRIEL**Curr/Major:** AER E**College:** Engineering**Unofficial Undergraduate Transcript****Iowa State University****FALL 2019 SEMESTER**

TRANSFER CREDITS ACCEPTED FROM

DES MOINES AREA COMM COLL-WEST (DMACC)

YEARS OF ATTENDANCE: 2017-2019

HIST	221	4.0
HIST	222	4.0
MATH	165	5.0
POL S	215	3.0
SP CM	212	3.0
SPAN	201	4.0
SPAN	202	4.0

TECHNICAL CREDITS ACCEPTED

EGT	0V01	3.0
EGT	0V02	3.0

TRANSFER CREDITS ACCEPTED FROM

ADVANCED PLACEMENT EXAMS

DATE OF ATTENDANCE: SPRING 2019

SPAN	101P	4.0
SPAN	102P	4.0
TOTAL TECHNICAL CREDITS		6.00
TOTAL TRANSFER CREDITS		41.00

ADMITTED AS A SOPHOMORE

ADMITTED TO DEGREE PROGRAM IN AER E

**FALL 2019**

AER E	160H	HONORS AER ENG PROB	3.0	A-	H
CHEM	167	ENGNRS GENERAL CHEM	4.0	A-	
ENGL	150	CRITCL THINK&CMUNIC	3.0	T	
ENGL	250H	HONORS WRI,ELE COMP	3.0	B+	H
ENGR	101	ENGINEERING ORIENTN	R	S	
ENGR	104	LEAD PROGRM ORIENTN	1.0	S	
HON	121	FIRST-YR HONORS SEM	1.0	S	H
LIB	160	INFORMATN LITERACY	1.0	S	
MATH	165	CALCULUS I	4.0	A-	
MUSIC	113	JAZZ ENSEMBLE	1.0	X	

TERM:	Cred Hrs	Qpts	GPA	Trnsf Hrs
	14.0	50.36	3.60	41.00
CUM:TOT HRS	56.0	14.0	50.36	3.60

**SPRING 2020 SEMESTER**

AER E	161H	HONOR NUM&GRPH TCNQ	3.0	A
AER E	192H	HONOR AEROSPC SEMNR	R	S
ENGR	105	LEAD PROGRM SEMINAR	1.0	S
HON	290H	SPECIAL PROB HONORS	2.0	S
MATH	166	CALCULUS II	4.0	A
PHYS	221H	HONORS-CLASSIC PH I	5.0	A

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92 LS 211 INTR U.S. LATINO ST 3.0 A

TERM:	Cred Hrs	Qpts	GPA	Trnsf Hrs
	15.0	60.00	4.00	0.00
CUM:TOT HRS	29.0	110.36	3.81	41.00

**FALL 2020 SEMESTER**

TRANSFER CREDITS ACCEPTED FROM  
IOWA WESTERN COMMUNITY COLLEGE (IWCC)

DATE OF ATTENDANCE: SUMMER 2020

PHYS 232	4.0
PHYS 232L	1.0
TOTAL TRANSFER CREDITS	5.00
AER E 261 INTRO PERFRMNC&DSGN	3.0 B-
C E 274 ENGINEERING STATICS	3.0 C- R
HON 321L HOW & WHY WE COUNT	1.0 S H
HON 321N ENTREPRENEURSHIP	1.0 S H
MAT E 273 PRIN MATRLS SCI&ENG	3.0 C
MATH 265 CALCULUS III	4.0 B

TERM:	Cred Hrs	Qpts	GPA	Trnsf Hrs
	13.0	31.02	2.39	5.00
CUM:TOT HRS	42.0	141.38	3.37	46.00

**SPRING 2021 SEMESTER**

AER E 362 AEROSPC SYS INTEGRT	3.0 B+
E M 324 MECHAN OF MATERIALS	3.0 C
MAT E 490C INDEPENDENT STUDY	2.0 A
MATH 267 DIFF EQ & TRANSFMS	4.0 A
US LS 323C TOP LAT AM RACE,CLS	3.0 A

TERM:	Cred Hrs	Qpts	GPA	Trnsf Hrs
	15.0	51.99	3.47	0.00
CUM:TOT HRS	57.0	193.37	3.39	46.00

**FALL 2021 SEMESTER**

AER E 310 AERODYNAM I:INCMPRS	3.0 C+
AER E 321 FLIGHT STRUCT ANALY	3.0 B+
AER E 494 MAKE TO INNOVATE II	2.0 A
M E 231 ENGR THERMODYNAMS I	3.0 B
M E 345 ENGINEERNG DYNAMICS	3.0 B-
U ST 301 MCNR:INTRO TO RES I	2.0 A-

TERM:	Cred Hrs	Qpts	GPA	Trnsf Hrs
	16.0	49.33	3.08	0.00
CUM:TOT HRS	73.0	242.70	3.32	46.00

**SPRING 2022 SEMESTER**

AER E 311 AERODYN II:CMPRSSBL	3.0 A
AER E 322 AEROSPC STRUCTR LAB	2.0 B+
AER E 344 AERODYN&PROPULS LAB	3.0 A
AER E 351 ASTRODYNAMICS I	3.0 A-
AER E 355 AIRCRFT FLI DYN&CTL	3.0 C+
AER E 361 COMP TECHNQ AER DSN	3.0 F R

TERM:	Cred Hrs	Qpts	GPA	Trnsf Hrs
	17.0	48.66	2.86	0.00
CUM:TOT HRS	90.0	291.36	3.24	46.00

**FALL 2022 SEMESTER**

AER E 331 FLGHT CONTROL SYS I	3.0 B
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AER E 361	COMP TECHNQ AER DSN	3.0	B+	#
AER E 421	ADV FLIGHT STRUCTRS	3.0	B	
C E 274	ENGINEERING STATICS	3.0	C+	#
ENGL 309	PROPOSAL&RPRT WRITNG	3.0	A-	
HSP M 383	WINE&SPIRITS HSP M	2.0	NP	<

	Cred Hrs	Qpts	GPA	Trnsf Hrs
TERM:	15.0	45.99	3.07	0.00
CUM:TOT HRS	151.0	99.0	332.34	3.36
				46.00

**SPRING 2023 SEMESTER**

AER E 301	FLIGHT EXPERIENCE	R	F
AER E 411	AERO VEHIC PROPULSN	3.0	C-
AER E 452	INTRO SYS ENG&ANALY	3.0	A
AER E 461	MOD DESIGN METHODOL	3.0	D+
AER E 490B	IND STDY PROPULSION	3.0	A
STAT 305	ENGINEERING STAT	3.0	B-

	Cred Hrs	Qpts	GPA	Trnsf Hrs
TERM:	15.0	41.01	2.73	0.00
CUM:TOT HRS	166.0	114.0	373.35	3.28
				46.00

**Cumulative Summary**

166.0	114.0	373.35	3.28
TOTAL HRS	ISU CUM HRS	ISU CUM QPTS	ISU CUM GPA

**End of Unofficial Undergraduate Transcript**

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*Unofficial**Unofficial**1***Date Displayed September 21, 2023 04:37 AM****\*\*\*\*\* END OF RECORD \*\*\*\*\*****EXPLANATION OF SPECIAL SYMBOLS:**

- R - GRADE SUPERSEDED BY A LATER GRADE
- # - COURSE REPEATED  
ONLY THE MOST RECENT GRADE USED IN CUMULATIVE TOTALS
- < - COURSE TAKEN UNDER PASS-NOT PASS OPTION
- \* - GRADE FOR PREVIOUS INCOMPLETE  
NOT INCLUDED IN TERM TOTALS
- H - HONORS COURSE
- N - GRADE NOT YET REPORTED

**UNOFFICIAL TRANSCRIPT****Iowa State University**

# Copy

## Work Experience

**Organization Name**

1 Microscale &amp; Interfacial Fluid Physics Laboratory (DARPA func

**Location**

Des Moines, IA

**Sector**

Private

**Position/Title**

Undergraduate Aerospace Researcher &amp; Experimental Engine

**Dates of Employment**

09/2021 - 08/2023

**Hours/Week**

40

**Job Type**

Part-time

**Organization's Activities**

Conducted cutting-edge research in microscale and interfacial fluid physics with a focus on DARPA-funded projects.

**Your Responsibilities**

Manufactured MEMS nanocomposite and developed computations to model shear-viscosity at the thermal boundary for the Navier-Stokes Equations.

**Your Accomplishments**

Contributed to experimental design, setup, and data analysis. Assisted in developing innovative solutions for fluid dynamics challenges.

**Your Challenges**

Contributed to experimental design, setup, and data analysis. Assisted in developing innovative solutions for fluid dynamics challenges.

**Reason for Leaving**

The Principal Investigator of the lab left the university to pursue other professional opportunities

**Organization Name**

2 Iowa State University of Science &amp; Technology

**Location**

Ames, IA

**Sector**

Public

**Position/Title**

Information Technology Specialist and Research Data Scientis

**Dates of Employment**

08/2019 - 05/2023

**Hours/Week**

24

**Job Type**

Part-time

**Organization's Activities**

Yahriel contributed to cutting-edge research at ISU, focusing on the intersection of information technology and scientific data analysis informatics.

**Your Responsibilities**

Yahriel's role encompassed the management of IT systems and leveraging data science techniques to support research endeavors in various disciplines.

**Your Accomplishments**

Implemented advanced data analysis methods, enhancing research outcomes & played a pivotal role in optimizing IT systems to support innovations.

**Your Challenges**

Balancing work with academic responsibilities, ensuring the security & integrity of research data, & adapting to evolving software/technology trends.

**Reason for Leaving**

Left position to pursue other professional opportunities and to focus on academic/scholarly activity

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## Work Experience

3

Organization Name	Location	Sector
California Institute of Technology Summer Undergraduate Research	Pasadena, IA	Public

Position/Title	Dates of Employment	Hours/Week	Job Type
Undergraduate Research Assistant at Greer Group	05/2022 - 08/2022	4	Internship

Organization's Activities Principal Investigator Julia R. Greer is a Ruben F. and Donna Mettler Professor of Materials Science, Applied Mechanics, and Medical Engineering
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Your Responsibilities Conducted experiments, collected and analyzed data, and contributed to the development of innovative materials and technologies. DMA & SEM certified.
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Your Accomplishments Contributed to a research paper on nanoscale materials, presented findings at a research symposium, and deepened understanding of materials science.
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Your Challenges Navigated complex experimental setups, worked with precision at the nanoscale, and managed time effectively in a fast-paced research environment.
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Reason for Leaving Completion of summer research program.
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4

Organization Name	Location	Sector
Boeing Aerospace Research Excellence in Engineering Internship	Ames, IA	Private

Position/Title	Dates of Employment	Hours/Week	Job Type
Research Fellow	08/2021 - 08/2022	20	Internship

Organization's Activities Engaged in cutting-edge aerospace research, focused on advancing technology and engineering in the aviation industry.
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Your Responsibilities Conducted in-depth research on advanced aerospace technologies, including Micro-Electro-Mechanical Systems (MEMS) and experimental systems engineering
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Your Accomplishments Contributed to the development of innovative aerospace solutions, including MEMS-based sensors for improved flight control systems. Presented research
--

Your Challenges Navigated vast aerospace research, with a deep understanding of physics, engineering principles, & precision in experimental design & data analysis.
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Reason for Leaving Completion of internship term and pursuit of further academic endeavors.
--

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## Work Experience

5

Organization Name	Location	Sector
Soft Materials & Matter Transport Research Group		Public

Position/Title	Dates of Employment	Hours/Week	Job Type
Independent Undergraduate Researcher & Systems Engineer	08/2019 - 08/2022	40	Full-time

Organization's Activities
Functional soft matter, surface/interface thermodynamics, metastable materials for manufacturing/technology development, and experiential learning.

Your Responsibilities
Synthesizing Meta-stable Particles and High-Efficiency Paper-Based MEMS Sensors. Assisted graduate students with CAD modeling & systems engineering.

Your Accomplishments
Created self-automated calibration & data capture system. Designed multi-function 3D piezo-electric devices for aeronautical applications.

Your Challenges
Communicating findings through scientific storytelling & literature review. Academic Manuscript Writing & Technical Writing skills; Public Speaking.

Reason for Leaving
The Principal Investigator Dr. Thuo left the university to pursue other professional opportunities.

6

Organization Name	Location	Sector
Stanford University Summer Undergraduate Research Fellow	Des, IA	Private

Position/Title	Dates of Employment	Hours/Week	Job Type
Undergraduate Research Assistant at Z-Energy Lab	05/2021 - 08/2021	40	Internship

Organization's Activities
Contributed to cutting-edge research at Stanford University's Z-Energy Lab, focusing on advanced energy systems and sustainability.

Your Responsibilities
Conducted literary analysis and literary review of ML methods, Data & Computational Science, and adapted ML methods to scientific methods.

Your Accomplishments
Cross-validated various models fitted with scientific datums; presented findings in optimizations of experimental design for scientific discovery.

Your Challenges
The program this year was virtual and I needed to take initiative for my own research & scholarly development in a disciplinary field foreign to me.

Reason for Leaving
The end of the Summer Undergraduate Research Fellowship (SURF) program.

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## Activities and Interests

### Organization or Activity

**1** Pursuit of Universal Truths in Interdisciplinary Explorations

#### Role(s)

Scholar, Researcher

#### Location

Des Moines, IA

#### Dates of Participation

08/2019 - present

#### Hours/Week

45

#### Weeks/Year

52

#### During or After College

During college

### Why did you get involved?

My intellectual curiosity and commitment to uncovering the fundamental truths of the universe have led me to engage in interdisciplinary exploration. I believe that by combining insights from various fields, we can decipher the code of the universe and gain a deeper understanding of our existence.

### What did you achieve and/or learn?

I have expanded my knowledge across diverse disciplines, including nature physics, anthropology of science, and systems engineering. I honed my ability to bridge gaps between disparate areas of study, fostering a holistic perspective and promote the advancement of global health & human ingenuity.

### Organization or Activity

**2** Multicultural Engagement/Advocacy of Science, Tech., & Society

#### Role(s)

Youth-Lobbyist, Program Coordinator, Multicultural Advocate

#### Location

Des Moines, IA

#### Dates of Participation

08/2018 - 08/2023

#### Hours/Week

15

#### Weeks/Year

40

#### During or After College

During college

### Why did you get involved?

I am deeply passionate about the intersection of STS in multicultural perspectives to promoting diversity, inclusion, and social justice. I built a platform to explore and promote the fusion of these fields actively engage in advocacy efforts and lobbying for non-profit educational initiatives.

### What did you achieve and/or learn?

I spearheaded initiatives that promoted cross-cultural understanding within the engineering community. Encouraged peers to incorporate anthropological insights into their work. collaborated with diverse groups to advocate for underrepresented voices in engineering, fostering more equity justice.

### Organization or Activity

**3** Association of Iowa Latinx Professionals (AILP)

#### Role(s)

Active Member, Volunteer, Youth-Community Leader

#### Location

Ames, IA

#### Dates of Participation

08/2019 - 08/2023

#### Hours/Week

12

#### Weeks/Year

40

#### During or After College

During college

### Why did you get involved?

To connect & support the Latinx community in Iowa & engage in initiatives that promote diversity and inclusion. I expanded my cultural horizons, developed effective advocacy skills, and contributed to the creation of more inclusive communities by promoting cultural understanding and social equity.

### What did you achieve and/or learn?

Through my involvement, I've witnessed the profound impact of mentorship on young learners' lives. I have contributed to fostering a love for STEM & bridging the gap between academic knowledge and real-world applications. This experience has reinforced the importance of mentorship in future leaders.

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## Awards and Honors

**1**  
Award or Honor Received

NASA Micro-G Neutral Buoyancy Experiment Design Teams Challenge

## Date Received

04/2022

## Basis of Selection

The Challenge is a highly competitive and prestigious competition organized by NASA. It selects teams of exceptional students who propose innovative experiments to be conducted in the unique microgravity environment (ISS & EVA) based on the scientific merit, creativity, and feasibility of experiment

## Why is this award or honor meaningful to you?

Finalist of this competition, NASA not only validated my dedication to aerospace and experimental systems engineering but also provided me with an opportunity to contribute to space research at the highest level. My team and I designed a groundbreaking experiment to advance global human ingenuity.

**2**  
Award or Honor Received

Ronald E. McNair Postbaccalaureate Program Fellowship

## Date Received

08/2021

## Basis of Selection

Fellowship is awarded to exceptionally talented & underrepresented undergraduates who demonstrate a strong commitment to pursuing advanced degrees & engaging in research. Recipients are selected based on their academic achievements, research potential, & dedication to overcoming educational barriers

## Why is this award or honor meaningful to you?

This award holds great significance to Yahriel as it not only recognizes his academic excellence but also his resilience in overcoming challenges. This award has provided him with invaluable research opportunities, mentorship, and a platform to pursue his passion for interdisciplinary research.

**3**  
Award or Honor Received

State of Iowa Youth Advisory Council Community Service Award

## Date Received

04/2020

## Basis of Selection

The State of Iowa Youth Advisory Council Community Service Award is a recognition of exceptional commitment and contributions to community service and advocacy (250 volunteer hours for term) . Recipients are chosen based on their outstanding dedication to addressing critical issues in the community.

## Why is this award or honor meaningful to you?

The award acknowledges his tireless efforts in promoting positive change and social justice within the community. It underscores his commitment to making a tangible impact on the lives of those he serves, aligning perfectly with his overarching goals of using science and research to benefit society.

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## Recommendation Letters

### Recommender 1

Name	Organization
Martin Thuo	North Carolina State University - Functional Polymers Group
Position/TITLE	Relationship
Professor, Materials Science and Engineering	Former Mentor

  

Email	Phone
mthuo@ncsu.edu	+1 617-458-2363

**FERPA Note Provided to Applicant:**

The information you provide in your application is — after you engage in enrolled attendance as a Stanford student and to the extent it is retained — covered by the Family Educational Rights and Privacy Act of 1974 (FERPA). FERPA also permits students to waive the right of access to letters of reference if you so choose. Waiving your right of access is optional; your decision to waive or decline to waive that right will have no bearing on the handling of your application. Your recommender will be notified of your choice.

**Applicant's FERPA Response:**

- I waive my right to access this report.  
 I do not waive my right to access this report.

Signed by: Yahriel Salinas-Reyes

### Recommender 2

Name	Organization
LeQuetia Ancar	Iowa State University
Position/TITLE	Relationship
Director of Multicultural Student Success	Advisor

  

Email	Phone
lancar@iastate.edu	+1 515-294-0690

**FERPA Note Provided to Applicant:**

The information you provide in your application is — after you engage in enrolled attendance as a Stanford student and to the extent it is retained — covered by the Family Educational Rights and Privacy Act of 1974 (FERPA). FERPA also permits students to waive the right of access to letters of reference if you so choose. Waiving your right of access is optional; your decision to waive or decline to waive that right will have no bearing on the handling of your application. Your recommender will be notified of your choice.

**Applicant's FERPA Response:**

- I waive my right to access this report.  
 I do not waive my right to access this report.

Signed by: Yahriel Salinas-Reyes

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## Short Answers

### Short Answer 1

How will your Knight-Hennessy Scholars experience prepare you to realize your immediate and long-term intentions?

The Knight-Hennessy Scholars experience holds the promise of profound transformation for my intellectual pursuits and career trajectory. With a background in Aerospace and Aeronautical Engineering and a specialization in Micro-Electro-Mechanical Systems, I have harnessed the power of precision in design and innovation. However, my aspirations transcend the confines of one discipline.

My journey from Iowa to prestigious institutions like Stanford and Caltech as a SURF Scholar has exposed me to the profound influence of interdisciplinary collaboration. These experiences have nurtured my independence of thought, a crucial criterion for Knight-Hennessy Scholars.

As I transition into the realm of Neuroscience and Biomedical Data Science and Informatics, I aim to leverage my expertise in engineering and research to decipher the enigmatic code and playscape of the human brain. My academic curiosity and penchant for solving complex problems align seamlessly with the purposeful leadership and civic mindset that the Knight-Hennessy program seeks.

The convergence of my past in aerospace engineering and my future in neuroscience offers a unique vantage point for pioneering innovative solutions. The Knight-Hennessy Scholars program, with its diverse community of global scholars, provides the fertile ground for cross-pollination of ideas and the realization of my long-term goal: to advance precision medicine and enhance global public health.

In summary, the Knight-Hennessy Scholars experience will be my brave new world where my diverse knowledge base melds with a passion for neuroscience, enabling me to unlock the code of the human brain for the betterment of humanity.

### Short Answer 2

Please tell us when you:

Made someone proud of you

The first time I ventured into eating vegetables and spicy foods, I embarked on a journey that not only challenged my taste buds but also resonated deeply with my Latin heritage. My parents had always instilled in me the importance of embracing our cultural traditions. I initially shied away from these flavors notoriously as the "picky-eater". When I finally took that leap and relished the diverse and vibrant tastes of my heritage, I made my parents proud but also reconnected with my cultural identity.

Were most challenged

My time at Caltech was academically challenging, pushing my intellectual limits beyond the edge of sanity. This experience tested my resilience and emphasized the importance of embracing discomfort for intellectual growth.

Fell short of expectations

I struggled with fear of failure and burnout due to my rapacious pursuit of knowledge. This hindered my ability to appreciate my accomplishments. However, I've since learned to manage pressure for personal and academic growth.

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## Short Answers

### Short Answer 3

Please tell us eight improbable facts about you. These could include: facts that people wouldn't expect to be true and/or facts that others are surprised to learn about you.

1 Since I was born November 11th, 2000, I had a Golden Birthday when I turned 11 years old on 11/11/11

2 At the Iowa Jazz Champs I was named "Junebug" by Jazz Legend Ron Carter for my trumpet solo performance during a MasterClass given after becoming the back-to-back victors.

3 I am a triple citizen of the U.S., Mexico, and El Salvador.

4 Officially, my first language I used was Sign Language followed by Spanish and English.

5 I have survived a massive tornado, maybe that's why I was meant to attend ISU since it's Home Of The CYCLONES!

6 Individually, the number of jobs and surgical procedures I've had in my life exceed my current age, 22.

7 I'm Clairvoyant and Synesthetic with a taste of what I like to call "Nuerodivergent Spiciness".

8 I am a poet and am passionate about creative storytelling & writing as well as media production & graphic design.

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## Essay

Connect the dots. How have the influences in your life shaped you?

My journey mirrors the dance of chaos and order in the universe. Born to immigrant parents in Iowa, I embarked on a path as uncharted as the cosmos I would later explore. My undergraduate journey in Aerospace Engineering was the first step toward unraveling the mathematical language of the universe. As the child of undocumented immigrants, my pursuit of knowledge shone a light on my path. My journey in Aerospace Engineering propelled me forward with a fascination for the skies, the mysteries of flight, and a desire to understand the fundamental forces of the universe.

My unique journey began with Sign Language as my first language due to hearing loss in my prenatal development and adolescence. This early experience taught me adaptability and resilience, navigating a world designed for those with auditory abilities. My Aerospace Engineering degree laid the foundation for precision engineering and Micro-Electro-Mechanical Systems (MEMS), refining my skills in meticulous design and innovation.

Transitioning to Stanford University and later, the California Institute of Technology, as a SURF Scholar, marked a transformational chapter. Walking the halls where Albert Einstein once roamed, I engaged with brilliant minds, revealing the profound influence of interdisciplinary collaboration. My journey led me to the realm of Neuroscience and Biomedical Data Science, driven by curiosity about the human brain and its complexities. Schizophrenia, with its intricacies, emerged as a muse for exploring neuroanatomy, neurodivergence, neuroscience, neurobiology, and psychiatric and neurological disorders.

Throughout my academic journey, I danced on the edge of madness, where imagination and practicality intertwined. Occasionally, sensory wonder and chaos enveloped me, leading to profound insights into the world. My blend of scientific rigor and artistic sensibility allowed me to approach complex problems from multiple angles, breaking down traditional barriers.

In conclusion, my life's journey, marked by neurological and neurodevelopmental challenges, shaped me into a scientist, artist, and truth-seeker. From hearing loss to academic heights, I embraced chaos and order in my quest for understanding. As a Knight-Hennessy Scholar, I carry the spirit of exploration and the belief that knowledge knows no boundaries.

My life has followed the intricate dance of chaos and order, much like the mathematical patterns of fractals. My journey has been marked by the challenges of ADHD, PTSD, Anxiety, and Autism. These neurological complexities, instead of hindrances, have fueled my academic pursuits, uncovering a realm of creativity and analytical thinking within the chaos of my mind. Hearing loss and a speech impediment posed daily communication challenges, but I harnessed the power of written expression to overcome them.

Academic obstacles tested my resolve, from financial challenges threatening my higher education dreams to language barriers as English is not my first language. Health issues like sciatica left me bedridden, but I adapted, using technology to engage with coursework remotely. As the primary caretaker for my ailing mother, I learned resilience and empathy, qualities I carried into my academic pursuits.

Challenges involved adjusting to mental health medications and diagnoses, deepening my empathy for others facing similar struggles and sparking an interest in the intersection of mathematics and mental health. My experiences have shaped my academic journey and aspirations. I am passionate about fractal mathematics and its parallels with the complexity of the human mind. Collaborative research projects bridging mathematics and neurodiversity hold the potential to illuminate intricate patterns of the human mind.

My story is one of resilience, determination, and a belief in education's transformative power. Amid life's chaos, I have emerged as a passionate scholar ready to contribute to mathematics and advocate for neurodiversity. Together, we will write a new chapter in the wondrous story of human ingenuity, science, and nature.

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## Additional Information

### Previous Application

Have you previously submitted an application to Knight-Hennessy Scholars?  Yes  No Entry Term: \_\_\_\_\_

### Personal Conduct

Have you ever been suspended, dismissed, or placed on enforced leave from any college, university, or post-secondary institution or been the subject of disciplinary action by such an institution?  
(Selecting yes does not disqualify you from admission; we seek to understand the context of your individual circumstances.) \*

Yes  No

Have you ever been placed on academic probation by any college or university? (Selecting yes does not disqualify you from admission; we seek to understand the context of your individual circumstances.) \*

Yes  No

### Minding the Gap(s)

Has there been a period exceeding three months when you were neither working nor in school since you completed high school/secondary school?

Yes  No

### One Last Thing

You may feel free to use the space below to share essential information not conveyed elsewhere in your application.

Formidable challenges & barriers have shaped my path. From early neurological & neurodevelopmental hurdles to external obstacles like financial difficulties, language barriers, health issues, & caregiving responsibilities, my journey has been marked by adversity. Yet, my response to these challenges has been remarkable. I embraced my unique identity & unwavering belief in the world's inherent goodness. I continued to read voraciously, seeking hidden truths even in seemingly flawed books. I've adhered to a strict code of chivalry, bridged language gaps through translation, & found solace in poetry, music, and science-art fusion. To the core, I've discovered my true self, a living testament to the boundless-curious human spirit & ingenuity.