

Jorge Cisneros Paz
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Education

Sept. 2017 – present	University of Washington , Department of Applied Mathematics, Seattle, WA <ul style="list-style-type: none">· Ph.D. in Applied Mathematics expected June 2022<ul style="list-style-type: none">- Advisor: Bernard Deconinck, Ph.D.- Thesis: <i>The Unified Transform Method and its semi-discrete analogue for numerically solving nonlinear initial-boundary-value problems</i>· M.S. in Applied Mathematics June 2019
Aug. 2013 – May 2017	University of Texas Rio Grande Valley , Edinburg, TX <ul style="list-style-type: none">· B.S. in Mathematics with concentration in Applied Mathematics May 2017<ul style="list-style-type: none">- Advisor: Zhijun Qiao, Ph.D.- Senior project: <i>Inverse scattering transform applied to the initial-value problem for the KdV equation</i>· B.S. in Physics May 2017· Minor in Chemistry, Honors Program, Summa Cum Laude

Areas of Interest

General

Complex analysis, computational methods, data-driven techniques, fluid mechanics, formal privacy methods, mathematical physics, numerical analysis, optimization methods, ordinary & partial differential equations, reduced-order methods

Emphasis

Asymptotic analysis, finite-difference schemes, integral equations, interior-point methods, nonlinear waves and coherent structures, numerical optimization, perturbation methods, quasi-Newton methods, Unified Transform Method of Fokas

Skills

Programming: MATLAB, Mathematica, Python, R, Ansys Fluent, Maple, C++, Sage, SWAN

Typesetting: L^AT_EX, Microsoft Office Suite

Languages: English, Spanish, and some French

Publications

To appear

1. J. Cisneros and B. Deconinck, *The numerical solutions of linear semi-discrete evolution problems on the half-line using the Unified Transform Method*, to appear in Stud. Appl. Math., [arXiv](#), 2021.

In Print

3. J. Cisneros and D. N. Riahi, *Two-phase blood flow and thermal effects in elastic stenosed arteries*, [Advanced Science, Engineering & Medicine](#), 2018.
2. R. Roy, D. N. Riahi, and J. Cisneros, *Effect of combined anticancer drugs treatment on heterogeneous brain tumors*, [Intl. J. of Applied & Computational Mathematics](#), 2017.

1. R. Roy, J. Cisneros, and D. N. Riahi, *Unsteady two-phase flow in a catheterized artery with atherosclerosis*, *Intl. J. of Fluid Mechanics Research*, 2015.

In Preparation

4. J. Cisneros and B. Deconinck, *The numerical solutions of linear semi-discrete evolution problems on the finite interval using the Unified Transform Method*, 2021.
3. J. Cisneros and B. Deconinck, *The numerical solutions of linear third-order semi-discrete evolution problems using the Unified Transform Method*, 2021.
2. J. Brust, N. Chiang, J. Cisneros, S. Leyffer, and C. Petra, *Structured interior-point methods*, 2021.
1. M. Farkas, J. Cisneros, and B. Deconinck, *Analytic continuation of solutions of the Unified Transform Method and its semi-discrete analogue*, 2021.

Technical Papers

4. J. Cisneros, J. Dogbey-Gakpetor, M. Reeves, E. Walker, M. Wimberley, and H. Wong, *Record linkage: FS-EM algorithm and machine learning techniques*, IMA Boot Camp, 2021.
3. J. Cisneros, C. M. Hartley, E. E. Masten, L. M. Mestre, N. Poppelreiter, R. Rebarber, N. J. Roberts, L. J. Sturman, and B. Tenhumberg, *Analysis of a metapopulation with an Allee effect*, Nebraska Summer Research Program, 2017.
2. J. Cisneros, N. Malhotra, M. J. Perez Pereda, and M. Stuart, *Ballast cleaning scheduling optimization*, RIPS Summer Program, 2016.
1. J. Cisneros, O. Ong, and L. Scheel, *Factorization lengths and elasticity in numerical monoids*, PURE Math REU, 2014.

Research Projects

Doctoral Thesis Research

April 2020 – present	<p>Numerical solutions to quasilinear problems</p> <ul style="list-style-type: none"> · Development of numerical method that solves class of nonlinear boundary value problems with analytic-continuation formulas at ghost points, derived from the Unified Transform Method (UTM) and semi-discrete analogue of UTM (SD-UTM)
Jan. 2020 – June 2021	<p>Analytic continuation of solutions of SD-UTM</p> <ul style="list-style-type: none"> · Extended semi-discrete solutions outside of domains where initial-boundary problems are originally defined · Closed-form expressions now allow us to evaluate solutions at ghost points in finite-difference schemes
Sept. 2018 – June 2020	<p>UTM for semi-discrete linear evolution problems on the half-line and finite interval</p> <ul style="list-style-type: none"> · Derived SD-UTM and applied it to various spacial discretizations of several first, second, and third-order linear equations, producing exact solutions to semi-discrete problems given appropriate initial and boundary data · Showed how SD-UTM treats derivative boundary conditions and ghost points introduced by choice of discretization stencil · Considered continuum limit of SD-UTM solutions and provided several numerical examples

Research Programs, Internships, & Appointments

Sept. 2021 – present	<p>ORISE Research Fellow, National Science Foundation (NSF), Alexandria, VA[†]</p> <ul style="list-style-type: none"> · Funded long-term NCSES Research Ambassadors Program at the NSF National Center for Science and Engineering Statistics (NCSES) with the U.S. Census Bureau, made possible through the Oak Ridge Institute for Science and Education (ORISE) · Currently developing a public-use microdata sample from the Annual Business Survey to allow data users to create customized estimates and tables that are not available through pre-tabulated data products · Supervision under Matthew Williams (NCSES), Audrey Kindlon (NCSES), and Patrice Hall (Census)
June 2021 – present	<p>Intern, Genentech, South San Francisco, CA[†]</p> <ul style="list-style-type: none"> · Funded long-term virtual internship program with the Clinical Pharmacology Department · Constructed and currently applying a computational pipeline that automatically determines reduced-order QSP and PBPK models through proper lumping with simulated annealing and a composite criterion, primarily in MATLAB and SimBiology · Supervision under Dan Lu (Genentech) and Justin Feigelman (Genentech)
Dec. 2020 – Jan. 2021	<p>Intern, ITM TwentyFirst LLC, Minneapolis, MN[†]</p> <ul style="list-style-type: none"> · Funded two-week virtual internship program with the Institute for Mathematics & its Applications and ITM TwentyFirst LLC · Improved existing Fellegi-Sunter Expectation Maximization unsupervised algorithm to better label a data pair as match/nonmatch and introduced novel method for determining review set thresholds, primarily in Python and pandas library · Supervision under Henry Fender (ITM) and Jonathan Hill (ITM)
June – Sept. 2020	<p>Givens Associate, Argonne National Laboratory, Lemont, IL[†]</p> <ul style="list-style-type: none"> · Funded twelve-week virtual internship program with the Laboratory for Applied Mathematics, Numerical Software, and Statistics under the Mathematics and Computer Science Division · Derived four structured BFGS methods to approximate bottleneck term in nonlinear constrained problem, all implemented with an interior-point algorithm, primarily in MATLAB · Supervision under Johannes Brust (Argonne Nat. Lab.), Cosmin Petra (Lawrence Livermore Nat. Lab.), Nai-Yuan Chiang (Lawrence Livermore Nat. Lab.), and Sven Leyffer (Argonne Nat. Lab.)
June – Aug. 2016	<p>Student Intern, CSX Transportation, Jacksonville, FL</p> <ul style="list-style-type: none"> · Funded nine-week internship program titled Research in Industrial Projects for Students (RIPS) in Los Angeles, CA with the Institute for Pure & Applied Mathematics (IPAM) and CSX Transportation · Developed a modified version of traveling-salesman algorithm to schedule near-optimal ballast-cleaner routes, taking as input list of jobs with priorities, regions with curfew, and other relevant scheduling data, primarily in MATLAB and C++ · Supervision under Masoumeh Taslimi (CSX), Kamallesh Somani (CSX), and Susana Serna (IPAM)
Aug. 2015 - May 2016	<p>Student Researcher, University of Texas Rio Grande Valley (UTRGV), Edinburg, Texas</p> <ul style="list-style-type: none"> · Funded year-long program titled Center of Excellence in STEM Education Student Research Program with the College of Science & Mathematics · Implemented and compared the performance of the biconjugate gradient stabilized method in serial and in two different parallel environments with GPUs: CUDA using NVIDIA cuBLAS library and OpenCL using OCCA open-source library, primarily in C++ and MATLAB · Supervision under Andras Balogh (UTRGV)

[†]virtual/remote event due to COVID-19 pandemic

- June – Aug. 2015 **Student Researcher**, University of Nebraska-Lincoln (UNL), Lincoln, NE
- Funded eight-week summer program titled Applied Mathematics Research Experience for Undergraduates in the Nebraska Summer Research Program
 - Devised a model for a metapopulation with carrying capacity and Allee threshold in an arbitrary number of patches to study which combination of initial and deterministic/stochastic parameters lead to persistence of population, primarily in MATLAB
 - Supervision under Richard Rebarber (UNL) and Brigitte Tenhumberg (UNL)
- June – July 2014 **Student Researcher**, University of Hawaii-Hilo (UHH), Hilo, HI
- Funded five-week summer program titled Pacific Undergraduate Research Experience (PURE) Math Summer Program with collaborations and funding from Sam Houston State University, producing technical paper
 - Explored methods of finding maximum/minimum factorization lengths for elements in any monoid generated by an arithmetic sequence, as well as characterizing elasticity of elements in monoids with only 2 generators, primarily in Sage
 - Supervision under Roberto Pelayo (UHH) and Brian Wissman (UHH)

Trainings & Summer Schools

- 6 – 17 Dec. 2021 **Synthetic Data: Balancing Confidentiality and Quality in Public Use Files**
- Online short course sponsored by the Joint Program in Survey Methodology on different approaches to generate synthetic datasets and quantify the remaining risk of disclosure
 - University of Maryland, College Park, MD[‡]
- Jan. – Sept. 2021 **Internship Network in the Mathematical Sciences (Inmas)**
- Professional development skills sessions and training coursework in the basics of programming, statistical learning, data science, modeling, and optimization in RStudio and Python
 - Monthly virtual sessions
- Dec. 2020 – Jan. 2021 **Winter Math-to-Industry Boot Camp**
- Professional development skills sessions and training coursework in the basics of programming, data analysis, and machine learning in RStudio and Python
 - University of Minnesota, Twin Cities, Minneapolis, MN[‡]
- 18 – 22 June 2018 **NSF-CBMS Solving Problems in Multiply-Connected Domains[‡]**
- Lectures and discussions on multiply connected domains, the Schottky-Klein Prime Function, and conformal mappings
 - University of California-Irvine, Irvine, CA
- Aug. 2015 – May 2017 **Wave Equations and Integrable Systems**
- Discussions on solitons and integrable systems in abstract and real-world settings
 - University of Texas Rio Grande Valley, Edinburg, TX
- 12 – 13 Oct. 2016 **2016 Modern Math Workshop @ SACNAS[‡]**
- Workshop to encourage minority undergraduates to pursue careers in the mathematical sciences and to assist undergraduates, graduate students and recent PhDs in building their research networks
 - Long Beach Convention Center, Long Beach, CA

Presentations

Conferences & Expositions

- 30 March – 1 April 2022 **The Twelfth IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory**
- Talk: title pending
 - University of Georgia, Athens, GA

[‡]awarded travel scholarship (conference registration, round-trip flights, lodging, etc.)

- 16 – 18 March 2022 **ASCP 2022 Online Annual Meeting[‡]**
 · Poster: “Automated model reduction for quantitative systems pharmacology and physiologically-based pharmacokinetic models: algorithm development and applications”
 · Denver, CO[†]
- 3 – 5 March 2022 **Latinx in the Mathematical Sciences Conference 2022[‡]**
 · Talk: title pending
 · University of California – Los Angeles, Los Angeles, CA
- 3 – 6 Aug. 2021 **2021 Intern Project Showcase**
 · Poster: “Automatic quantitative systems pharmacology model reduction approaches: algorithm development with application”
 · Genentech, South San Francisco, CA[†]
- 19 – 23 July 2021 **2021 SIAM Annual Meeting[‡]**
 · Talk: “The Unified Transform Method for linear semi-discrete evolution IBVPs”
 · Spokane Convention Center, Spokane, WA[†]
- 1 – 5 March 2021 **SIAM 2021 Conference on Computational Science and Engineering[‡]**
 · Poster: “Structured interior-point methods”
 · Fort Worth, TX[†]
- 15 Jan. 2021 **Winter Math-to-Industry Boot Camp Final Presentations Day**
 · Talk: “Record linkage”
 · Institute for Mathematics & its Applications, Minneapolis, MN[†]
- 28 Aug. 2020 **Summer Argonne Student Symposium**
 · Talk: “Structured interior-point methods”
 · Argonne National Laboratory, Lemont, IL[†]
- 18 – 20 Oct. 2019 **2nd Biennial Meeting of SIAM Pacific Northwest Section[‡]**
 · Talk: “The Unified Transform Method for linear semi-discrete evolution IBVPs on the half-line & finite interval”
 · Seattle University, Seattle, WA
- 19 – 21 June 2019 **Applied Mathematics: The Next 50 Years Conference**
 · Poster: “The Unified Transform Method for the semi-discrete heat equation on the half-line”
 · University of Washington, Seattle, WA
- 23 March 2019 **4th Coastal Bend Mathematics & Statistics Conference**
 · Talk: “The Unified Transform Method for the semi-discrete heat equation on the half-line”
 · University of Texas Rio Grande Valley, Edinburg, TX
- 4 – 7 Jan. 2017 **2017 Joint Mathematics Meetings[‡]**
 · Talk: “Ballast cleaning schedule optimization”
 · Hyatt Regency Atlanta and Marriott Atlanta Marquis, Atlanta, GA
- 13 – 15 Oct. 2016 **2016 SACNAS National Conference[‡]**
 · Poster: “Ballast cleaning schedule optimization”
 · Long Beach Convention Center, Long Beach, CA
- 10 May 2016 **C-STEM Student Research Project Expositions**
 · Poster: “Parallel biconjugate gradient stabilized method using the OCCA library”
 · University of Texas Rio Grande Valley, Edinburg, TX
- 28 – 30 April 2016 **2016 IBII International Conference on Mathematics and Applications[‡]**
 · Talk: “Analysis of a metapopulation model with an Allee effect”
 · Talk: “Parallel biconjugate gradient stabilized method using the OCCA library”
 · Sam Houston State University - The Woodlands Center, The Woodlands, TX
- 8 – 10 April 2016 **Great Plains Honors Conference 2016[‡]**
 · Talk: “Analysis of a metapopulation model with an Allee effect”
 · John Brown University & Oral Roberts University, Siloam Springs, AR
- 31 March – 2 April 2016 **96th Annual Meeting of the Texas Section of the MAA[‡]**
 · Talk: “Biconjugate gradient stabilized method on graphical processing units”
 · Stephen F. Austin State University, Nacogdoches, TX

- 14 – 18 March 2016 **APS March Meeting 2016[†]**
 · Poster: “Microwave irradiation on graphene dispersed within polymeric matrices”
 · Baltimore Convention Center, Baltimore, MD
- 9 – 11 April 2015 **Latin@s in the Mathematical Sciences Conference at the Institute for Pure and Applied Mathematics[‡]**
 · Poster: “Two-phase blood flow and thermal effects in elastic artery with stenosis”
 · University of California - Los Angeles, Los Angeles, CA
- 24 Nov. 2014 **Third Annual Undergraduate Research Conference**
 · Talk: “Two-phase blood flow and thermal effects in elastic artery with stenosis”
 · Talk: “Factorization lengths and elasticity in numerical monoids”
 · University of Texas-Pan American, Edinburg, TX
- 4 Nov. 2014 **PACE 2014 Ethics Conference: Bioethics & the Future of Medical Education**
 · Talk: “Two-phase blood flow and thermal effects in elastic artery with stenosis”
 · University of Texas-Pan American, Edinburg, TX
- 16 – 18 Oct. 2014 **2014 SACNAS National Conference[†]**
 · Poster: “Atherosclerosis effect on blood flow in a catheterized artery”
 · Los Angeles Convention Center, Los Angeles, CA
- 4 April 2014 **16th Annual University of Texas-Brownsville Research Symposium**
 · Talk: “Atherosclerosis effect on blood flow in a catheterized artery”
 · University of Texas-Brownsville, Brownsville, TX
- 25 March 2014 **PACE 2014 Ethics Conference: Bioethics Day @ MORE Health: Public Health, Public Dilemmas**
 · Poster: “Atherosclerosis effect on blood flow in a catheterized artery”
 · University of Texas-Pan American, Edinburg, TX
- 26 Nov. 2013 **Second Annual Undergraduate Research Conference**
 · Talk: “Atherosclerosis effect on blood flow in a catheterized artery”
 · University of Texas-Pan American, Edinburg, TX

Seminars & Workshops

- 30 Nov. 2021 **Integrable Systems and Nonlinear Mechanics Seminar**
 · Talk: “The semi-discrete UTM for linear evolution boundary value problems”[†]
 · University of Texas Rio Grande Valley, Edinburg, TX
- 26 Oct. 2021 **Mathematical Methods Journal Club**
 · Talk: “Automated model reduction for pharmacology models”[†]
- 23 Feb. 2021 · Talk: “Record linkage: Fellegi-Sunter Expectation Maximization algorithm”[†]
- 17 Nov. 2020 · Talk: “Structured L-BFGS interior-point methods”[†]
- 14 Jan. 2020 · Talk: “The semi-discrete Unified Transform Method for the linear KdV equation on the finite interval”
- 29 Oct. 2019 · Talk: “The Unified Transform Method for linear semi-discrete evolution IBVPs on the finite interval: linear Schrödinger equation”
- 7 May 2019 · Talk: “The Unified Transform Method for the semi-discrete heat equation on the half-line”
- 23 April 2018 · Talk: “Ballast cleaning schedule optimization”
 · University of Washington, Seattle, WA
- 13 Sept. 2021 **Modeling & Simulation Forum**
 · Talk: “Automated model reduction for quantitative systems pharmacology and physiologically-based pharmacokinetic models: algorithm development and applications”[†]
 · Genentech, South San Francisco, CA
- 24 March 2019 **UTRGV Alumni Forum on Nonlinear Systems**
 · Talk: “The Unified Transform Method for the semi-discrete heat equation on the half-line: Dirichlet and Neumann BCs”
 · University of Texas Rio Grande Valley, Edinburg, TX

22 April 2016	Applied Mathematics Seminar · Talk: “Krylov subspaces in practice: BiCGSTAB on GPUs”
4 Dec. 2014	
	· Talk: “Optimizing free-convection models influenced by cavity dimensions and Reynolds, Prandtl, and Froude numbers” · University of Texas-Pan American, Edinburg, TX
11 April 2014	Secret Student Seminar · Talk: “Atherosclerosis effect on blood flow in a catheterized artery” · University of Texas-Pan American, Edinburg, TX

Awards & Honors

28 April 2020	Student and Alumni Profile · Interview profile about graduate students across UW to share the great work we do with the community as well as people outside of UW who are interested in graduate education
9 May 2017	Profiles In Excellence · Interview profile about UTRGV students who have made outstanding contributions to the university and local communities
Aug. 2015 – May 2017	President’s List for UTRGV · Released after each Fall and Spring semester and includes undergraduate students who enrolled in at least 12 college-level hours and earned a GPA of 3.5 for courses taken that semester
Aug. – Dec. 2015	C-STEM Student Research Program at UTRGV · Funded research program that provides support for undergraduate students to conduct research with faculty in Department of Defense research areas of interest
Aug. 2013 – May 2015	Dean’s List for UTPA · Released after each Fall and Spring semester and includes undergraduate students who enrolled in at least 12 college-level hours and earned a GPA of 3.5 for courses taken that semester
Jan. – May 2015	Undergraduate Research Initiative · Award to fund project “Traveling-wave solutions of nonlinear partial differential equations” in student salary and travel expenses
17 April 2015	Academic Deans’ Outstanding Student · Award to honor top three students from each UTPA college at the 36th Annual Awards and Recognition Convocation
13 May 2015	Student Excellence Award · Recognition award for contribution to UTPA College of Science and Mathematics and for advances in mathematics through research projects
4 April 2014	16th Annual University of Texas-Brownsville Research Symposium · First prize for oral presentations in Physical and Mathematical Sciences Section

Fellowships & Scholarships

2017 – 2020	Ford Foundation Predoctoral Fellowship · Ford Fellowship for \$24,000 per year for 3 years of PhD program to cover all remaining expenses
2017 – 2018, 2021 – 2022	Graduate Opportunities & Minority Achievement Program Fellowship · Presidential Fellowship for \$20,000 per year for first and last year of PhD program to cover all remaining expenses
Jan. – May 2017	Jesse H. & Mary G. Jones Scholarship · UTRGV Honors Program scholarship for \$500 to cover all university-related expenses
Jan. 2016 – May 2017	UTRGV Achieve Grant · UTRGV scholarship to cover all university-related expenses not covered by other scholarships, with an additional \$500 for book expenses
Aug. 2014 – Dec. 2015	Texas Grant Program · UTPA scholarship for \$2,500 per semester to cover all university-related expenses

2014 – 2017	Texas Public Educational Grant · UTPA/UTRGV scholarship for \$1,000 per semester to cover all university-related expenses
2013 – 2014	Texas Grant Program – New Initial High School · UTPA scholarship for \$2,500 per semester to cover all university-related expenses
2013 – 2014	FY14 Miscellaneous Agency Scholarship · UTPA scholarship for \$750 per semester to cover all university-related expenses
Jan. – May 2014	FY2014 Miscellaneous Restricted Scholar · UTPA scholarship for \$500 per semester to cover all university-related expenses
17 May 2014	South Texas Federal Credit Union Scholarship · Annual Scholarship Challenge for \$1,000 to cover book expenses
2013 – 2017	FY14 University Scholar Meritorious · UTPA/UTRGV scholarship for \$2,000 per semester to cover all university-related expenses

Leadership

Outreach & Service

19 – 23 July 2021	Co-organizer of Minisymposium at 2021 SIAM Annual Meeting · <i>The Unified Transform Method and Its Applications</i> with four speakers, co-organized with Matthew Farkas
March 2021 – present	SIAM CSE21 Mentoring Program · Mentor providing guidance and assistance for a student in the early years of their PhD program that participated in the SIAM CSE21 conference
2020 – 2021	Graduate Student Point-of-Contact for Prospective Students · Mentor providing guidance and assistance for prospective students interested in the Applied Mathematics Department at UW
2019 – present	Graduate Student Mentorship Program · Mentor providing guidance and assistance for incoming first-year graduate students into the Applied Mathematics Department at UW
11 Dec. 2019	Lockwood Elementary School Math Fair · Demonstrations in mathematics for 4th and 5th grade students
14 March 2019	Northshore Middle School Math Fair · Demonstrations in mathematics for a district-wide after-school math fair
April 2018 – present	Applied Partial Differential Equations Seminar · In charge of weekly seminar that focuses on study of analytical & numerical solution methods for PDEs, analysis of their solutions, and their applications, among other topics
June – Aug. 2014	Flags and More Flags volunteer · Designed several flag designs for small businesses and local car dealerships, and sold flag packages as traveling salesman · Developed professional and formal communication skills
2012 – 2020	Mathematics Tutor · On request · Topics from basic algebra to vector geometry to proof-writing to solving ODEs/PDEs · One-on-one or group sessions for exams or to better understand material
2012 – 2020	Physics Tutor · On request · Topics from introductory physics to thermodynamics to electromagnetism · One-on-one or group sessions for exams or to better understand material

Organizations & Societies

Feb. – March 2021	<p>Sustainable Horizons Institute’s SIAM CSE21 Broader Engagement Program</p> <ul style="list-style-type: none"> · Organization that provides a rich scientific program, mentoring, and career and professional development to students from underrepresented and underprivileged backgrounds who aspire to broaden their experience in research-based professional activities
Sept. 2017 – present	<p>Society for Industrial and Applied Mathematics</p> <ul style="list-style-type: none"> · Organization that ensure strongest interactions between mathematics and other scientific and technological communities through membership activities, publication of journals and books, and conferences · Outreach Officer 2020 – 2021
2015 – 2017	<p>Sigma Pi Sigma</p> <ul style="list-style-type: none"> · National physics honor society that honors outstanding scholarship in physics and encourages interest in physics among students at all levels, frequently visiting local schools for physics demonstrations and activities · President 2016 – 2017
July 2015 – present	<p>American Association for the Advancement of Science</p> <ul style="list-style-type: none"> · International non-profit organization dedicated to advancing science for the benefit of all people
Aug. 2014 – present	<p>Student Physics Society</p> <ul style="list-style-type: none"> · Professional association explicitly designed for students with an interest in the advancement of physics and related fields
Feb. 2014 – present	<p>National Alliance for Predoctoral Studies in the Mathematical Sciences</p> <ul style="list-style-type: none"> · Organization with goal to substantially increase likelihood to enter into and succeed in doctoral program in mathematical sciences
Jan. 2014 – present	<p>Honor Society of Phi Kappa Phi</p> <ul style="list-style-type: none"> · Most prestigious all-discipline honor society in search for top 7.5%
Aug. 2013 – present	<p>Eta Omicron Nu</p> <ul style="list-style-type: none"> · Honors organization made to promote and encourage academic excellence among members and all students, and strive toward helping community through service