# COLLEGE OF SCIENCE AND TECHNOLOGY

## GRADUATE STUDENT GRADUATION CEREMONY

Temple University

THURSDAY, THE EIGHTH OF MAY
TWO THOUSAND AND TWENTY-FIVE

THE TEMPLE PERFORMING ARTS CENTER
PHILADELPHIA, PENNSYLVANIA

# PROGRAM

**Thursday, May 8 | 5:30 p.m.**
**The Temple Performing Arts Center**

**Miguel Mostafá, PhD**
Dean

**Processional***
"Pomp and Circumstance March in D Major, Op. 39, No. 1"
By Sir Edward Elgar

**The National Anthem***
"The Star-Spangled Banner" By Francis Scott Key

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|---|---|
| **Welcome** | Miguel Mostafá, PhD |
| **Keynote Address** | James Patrick Guare, Jr., MA, CST '77, '83<br>CST Board of Visitors |
| **Student Address** | Jordan Howe, PSM, CST '25 |
| **Doctoral Hooding and Presentation of Doctor of Philosophy Degrees** | Daniel Strongin, PhD,<br>Associate Dean for Graduate and Postdoctoral Affairs |
| **Presentation of Master's Degrees** | Daniel Strongin, PhD |
| **Presentation of Professional Science Master's Degrees** | Daniel Strongin, PhD |
| **Alumni Remarks** | Michael Remaker II, BS, CST '06,<br>CST Alumni Board President |
| **Closing Remarks** | Miguel Mostafá, PhD |

**Alma Mater***
By W. St. Clair and C.D. Coppes

**Recessional***
"Pomp and Circumstance March in G Major Op. 39, No. 4"

** Audience members please stand, if able.*

## KEYNOTE SPEAKER

### James Patrick Guare, Jr., CST '77, '83

James Guare earned his bachelor's and master's in chemistry at Temple University. He started at Merck & Co. in drug discovery in 1980, and over his 28 years with the company he did research on antidepressants, oxytocin inhibitors (premature labor), and siRNA, a short, double-stranded RNA molecule that regulates gene expression used in drug development and gene therapy.

Guare started working on protease inhibitors for the treatment of HIV in 1985, and by 1996 Merck released Crixivan (indinavir), the first effective treatment for the disease. In 1997, Guare and four of his colleagues received the National Inventor of the Year Award for the discovery, and the following year received the Award for Creative Invention from the American Chemical Society. In 2007 the group received the European Inventor of the Year Award.

Guare continued to work on HIV, and in 1999 invented a proof-of-concept drug that demonstrated integrase inhibitors are a better target then are protease inhibitors or reverse transcriptase inhibitors. As a result, Merck released Isentris (raltegravir) in 2007, which has proven to be far superior to integrase inhibitors.

After retiring, Guare cofounded the College of Science and Technology Alumni Board, and under his leadership started the college's successful Owl to Owl Mentoring Program, the Alumni Board Scholarship Fund and various other initiatives.





## STUDENT SPEAKER

### Jordan Howe, CST '25

Jordan Howe is graduating with a Professional Science Master's in bioinformatics, earned through the college's +1 master's program for undergraduate students. As an undergrad, Howe was part of the university's Honors Program with a double-major in biochemistry and Spanish and a 3.7 GPA. Howe was also a student athlete on the Temple University Women's Rowing team, a Fly in 4 Ambassador and an undergraduate teaching assistant.

Howe worked with Professor Spiridoula Matsika's research group on "Benchmarking Computational Methods for Absorption of 4-Substituted Indole," a computational chemistry project that involves using programs to calculate the theoretical values associated with the excited states of the indole molecule with substitutions conducted on the fourth position. This is performed with the ultimate goal of creating an improved indole-based fluorescent probe with a larger fluorescence duration and higher quantum yield.

This work was recently published, with Howe as first author, in the *Journal of Computational Chemistry* in September 2024 under the title "Modeling the effect of substituents on the electronically excited states of indole derivatives." She has also worked on a project with the College of Public Health that involved conducting literature reviews and data analysis from surveys to examine potential causes of increased tobacco usage among sexual minority populations.

With the Elrod Lab in the Aging and Cardiovascular Discovery Center at the Temple University Lewis Katz School of Medicine, Howe is conducting a computational protein docking pipeline to determine the interactome of the MICU proteins. After graduation, she will be continuing this work in the biomedical sciences PhD program at the Katz School of Medicine.

## ALUMNI SPEAKER

**Michael Remaker II, BS, CST '06**

A data and financial technology executive, Michael Remaker is a leader in restructuring data systems across various industries and developing strategies to bring advanced analytics products to market.

He is currently chief technology officer (CTO) at Mural Health, a platform for managing the clinical trial experience for participants and providers. He was previously a technical advisor and fractional CTO with G2 Startup Advisors, a company that improves back-office operations such as talent acquisition and finance. He also served as a strategic advisor and senior vice president, data and engineering, at Spring EQ, a fintech company specializing in mortgages and home equity loans.

Previous leadership roles have included vice president, data architecture and strategy, at Relay Network, which builds custom news and information feeds for customers, employees and businesses.

Remaker earned his bachelor's in information science and technology and graduated *magna cum laude* in 2006. He joined the CST Alumni Board in 2018, then served as Board treasurer from 2020 to 2022. He became Board president in 2022. He has also been a mentor to several CST students through the Alumni Board's Owl to Owl Mentor Program.





# Candidates for Degrees | Doctor of Philosophy

*DEGREE COMPLETED SUMMER 2024*

**Amani H. Almalki**
*Computer and Information Science*
Advancements in Artificial Intelligence and Computer Vision for Dental Imaging Analysis: Self-Supervised Learning Innovations
Faculty Advisor: Longin Jan Latecki

**Lori Cobani**
*Chemistry*
Insights into the Metal Handling Mechanisms of TiO2-Binding Bacteria Rhodococcus Ruber
Faculty Advisor: Ann Valentine, PhD

**Mary R. Cortese**
*Biology*
Range Shifts and Altered Community Interactions in the Eastern Pacific Kelp Forest Ecosystem
Faculty Advisor: Brent Sewall, PhD

**Abdurrahman Demirelli**
*Mathematics*
Stochastic Homogenization of Nonconvex Hamilton-Jacobi Equations in One Dimension
Faculty Advisor: Atilla Yilmaz, PhD

**Md Imdadul Haque**
*Chemistry*
Siderophore DFOB promoted dissolution and adsorption properties of Ti bearing minerals
Faculty Advisor: Ann Valentine, PhD

**Brandi Henry**
*Mathematics*
Antibiotic Movement through Heterogeneous Biofilms
Faculty Advisor: Gillian Queisser, PhD

**Jinfeng Kang**
*Chemistry*
Synthesis of Bioactive Tabersonine-derived Mono- and Bis-indole Alkaloids and Rational Design and Synthesis of Specific Fluorescent Histone Deacetylase (HDAC) Probes
Faculty Advisor: Rongsheng Wang, PhD

**Ruth E. Meadow-MacLeod**
*Mathematics*
End-Periodic Train Track Maps and Dynamics on Free-by-Cyclic Groups
Faculty Advisor: Samuel J. Taylor, PhD

**William Motsch**
*Chemistry*
Mechanistic Studies into Visible-Light Driven Hydrodesulfurization Reactions for C-C Coupling
Faculty Advisor: Yugang Sun, PhD

**Tantrik R. Mukerji**
*Mathematics*
Applications of Gaussian Fields to the Permanent and the Matching Polynomial
Faculty Advisor: Wei-Shih Yang, PhD

**Dylan Novack**
*Chemistry*
Direct Analysis of Mutational Effects in Disease and Drug Design Through Alchemical-Path Metadynamics
Faculty Advisor: Vincent Voelz, PhD

**Alyssa M. Pivirotto**
*Bioinformatics*
Dynamics of Natural Selection on Human Genomic Variants
Faculty Advisor: Jody Hey, PhD

**Robert Raddi**
*Chemistry*
A Bayesian Inference/Maximum Entropy Approach for Optimization and Validation of Empirical Molecular Models
Faculty Advisor: Vincent Voelz, PhD

**Raj K. Sah**
*Physics*
Description of Polarons in Layered Transition Metal Oxides Using the Regularize-Restored Strongly Constrained and Appropriately Normed Density Functional with Fully Nonlocal Corrections, and Effect of Strain on the Band Gap of Molybdenum Disulfide
Faculty Advisor: Xifan Wu, PhD

**Kefeng Shi**
*Physics*
Connections Between Properties and Local Structures in Liquid Water and Salt Solutions Based on First-Priniciples Calculations
Faculty Advisor: Xifan Wu, PhD

**April L. Stabbins**
*Biology*
Quantifying the Sphere of Influence: Ecology and Trophic Dynamics of Methane Seep Communities Along the Pacific Costa Rican Margin
Faculty Advisor: Eric Cordes, PhD

**Yue Zhao**
*Chemistry*
Steric-Free Bioorthogonal Profiling of Cellular Acetylation and Glycosylation Via a Fluorine-Selenol Displacement Reaction (FSEDR)
Faculty Advisor: Rongsheng Wang, PhD

## *DEGREE COMPLETED FALL 2024*

**James Allen**
*Chemistry*
Structure and Properties of Novel Energetic Coordination Complexes and their Potential as Magnetically Switchable Explosives
Faculty Advisor: Michael Zdilla, PhD

**Taryn Anthony**
*Chemistry*
Integrating Data Analytics and Computational Programming for Enhanced Material Design in High Performance Thin-Film Optical Coatings
Faculty Advisor: Susan Jansen Varnum, PhD

**Peiyu Liang**
*Computer and Information Science*
Beyond Local Neighborhoods: Leveraging Informative Nodes for Improved Graph Neural Networks Performance
Faculty Advisor: Xubin He

**Steven Weaver**
*Bioinformatics*
Advancing Molecular Epidemiology: Enhanced Methods and Applications in Pathogen Transmission Network Analysis
Faculty Advisor: Sergei Pond, PhD

## *DEGREE COMPLETED SPRING 2025*

**Rafaa Aljurbua**
*Computer and Information Science*
Graph-Based Approach: Bridging Insights from Structured and Unstructured Data
Faculty Advisor: Zoran Obradovic, PhD

**Irem Altiner**
*Mathematics*
Metalenses and Refraction Problems in Optics
Faculty Advisor: Cristian Gutiérrez, PhD

**Abigail Bender**
*Chemistry*
Single-Molecule Imaging of DNA on Gold Nanoparticle Surfaces
Faculty Advisor: Katherine Willets, PhD

**Sam Black**
*Computer and Information Science*
Image Classification With Unstructured Collections
Faculty Advisor: Richard Souvenir, PhD

**Louise Borthwick**
*Geoscience*
Geophysical Investigation of Glacier Geometry and Subglacial Geology, and Their Influence on Glacier Dynamics: Case Studies of Taku Glacier, Alaska and Thwaites Glacier, West Antarctica
Faculty Advisor: Atsuhiro Muto, PhD

**Sam Boudeau**
*Bioinformatics*
The Mechanistic Role of Epistasis in Evolutionary Rate Variation and Neutral Theory
Faculty Advisor: Sudhir Kumar, PhD

**Will Brew**
*Biology*
Mechanistic Studies into Visible-Light Driven Hydrodesulfurization Reactions for C-C Coupling
Faculty Advisor: Yugang Sun, PhD

**Christopher Carnivale**
*Biology*
Investigations of Bacterivory and Microplastics in the Southern Ocean
Faculty Advisor: Robert Sanders, PhD

**Zhi Chen**
*Physics*
Effectively Prevent Emitting Black Carbon and PM2.5 Pollution into the Air with Electrorheology
Faculty Advisor: Rongjia Tao, PhD

**Emily Cowell**
*Biology*
Ecological Dynamics of Methane-Seep Foundation Species: Succession, Disturbance Response and Niche Stability
Faculty Advisor: Erik Cordes, PhD


CST GRADUATES
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**Somaiyeh Dadashi**
*Chemistry*
Development of Multi-Modal Nonlinear Spectroscopy for Interfacial Studies
Faculty Advisor: Eric Borguet, PhD

**Artur Henrique de Oliveira Andrade**
*Mathematics*
Harmonic Analysis Methods for Elliptic Boundary Value Problems in Uniformly Rectifiable and Infinitesimally Flat Ahlfors Regular Domains
Faculty Advisor: Irina Mitrea, PhD

**Wesley Deeg**
*Physics*
Photogalvanic Study of the Structure Topology Relationship in Chiral Multifold Semimetals and Development of Novel Broadbands Ultrafast Probes
Faculty Advisor: Darius Torchinsky, PhD

**Saman Enayati**
*Computer and Information Science*
Maximizing Learning Efficiency with Limited Labeled Data: Applications to Healthcare and Education
Faculty Advisor: Justin Shi, PhD

**Elizabeth Garrison**
*Computer and Information Science*
Leveraging AI as Assistive Technology to Support Neurodivergent Users
Faculty Advisor: Slobodan Vucetic, PhD

**Steven Goold**
*Chemistry*
The Use of Expanded Ensemble for the Prediction of Water-Organic Solvent Partition Coefficientsof Small Drug-Like Molecules
Faculty Advisor: Vincent Voelz, PhD

**Peter Isaev**
*Computer and Information Science*
Non-Axiomatic Reasoning and Casual Explorative System (NARCES), A Hybrid Symbolic Reasoning with Sub-Symbolic Learning for Autonomous Intelligent Agents
Faculty Advisor: Pei Wang, PhD

**Danni Luo**
*Chemistry*
Design, Synthesis and Applications of Spiroligomer-Based Macrocycles
Faculty Advisor: Christian Schafmeister, PhD

**Robert Maloney**
*Chemistry*
Design, Characterization, and Therapeutic Evaluation of Flexibly-Constrained Stapled Peptides for Breast Cancer and Neuronal Regeneration
Faculty Advisor: Rongsheng Wang, PhD

**Nadia Niknami**
*Computer and Information Science*
Improving Performance of Intrusion Detection Systems in SDN
Faculty Advisor: Joseph Science, PhD

**Rob Oakley**
*Mathematics*
The Algebra, Geometry, and Topology of Cusped Mapping Tori
Faculty Advisor: David Futer, PhD

**Hussain Otudi**
*Computer and Information Science*
Modeling Infrequent Events by Integrating Noisy Data from Multiple Sources and Applying Machine Learning to Classify and Predict Disruptions
Faculty Advisor: Zoran Obradovic, PhD

**Victoria Palmaccio**
*Physics*
The Hunter Experiment: A Precision Massive-Neutrino Search Based on Laser-Cooled Atomic Source
Faculty Advisor: Bernd Surrow, PhD

**Jo Pan**
*Computer and Information Science*
Information Extraction from Scientific Literature
Faculty Advisor: Longin Jan Latecki, PhD

**Lisa Schmelkin**
*Bioinformatics*
The Mechanistic Role of Epistasis in Evolutionary Rate Variation and Neutral Theory
Faculty Advisor: Sudhir Kumar, PhD

**Avery Selberg**
*Biology*
From Genes to Traits: A combined Approach to Detecting Sequence Errors and Convergent Evolution
Faculty Advisor: Sergei Pond, PhD

**Madison Shoraka**
*Mathematics*
Modeling Reorganization of pCF10-Induced Complex Structures in Enterococcus Faecalis Under Erythromycin Treatment
Faculty Advisor: Gillian Queisser

**Vaibhav Singh**
*Chemistry*
Modeling Cation Dynamics in Strong-Field Ionization: Non-Adiabatic Dynamics and Quantum Chemistry Approaches
Faculty Advisor: Spiridoula Matsika, PhD

**Shea Stewart**
*Chemistry*
Mechanistic Studies into Visible-Light Driven Hydrodesulfurization Reactions for C-C Coupling
Faculty Advisor: Yugang Sun, PhD

**Brandis Whitfield**
Mathematics
The Geometry of End-periodic Mapping Tori
Faculty Advisor: Samuel J. Taylor, PhD

**Hanzi Xu**
*Computer and Information Science*
Enhancing NLP Capabilities: Strategies for Language Model Adaptation in Low-Resource Text Classification Task and Evaluations
Faculty Advisor: Slobodan Vucetic, PhD

*DEGREE COMPLETED SUMMER 2025*

**Christopher Absil**
*Chemistry*
Applications of Coordination Chemistry Toward on Demand Hydrogen Production Catalysts and Safer Propellant Additives
Faculty Advisor: Michael Zdilla, PhD


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**Nouf Albarakati**
*Computer and Information Science*
Joint Clustering of Hospitals Based on Their Admission Behavior for Different Diseases Using Network of Networks Data Model
Faculty Advisor: Zoran Obradovic, PhD

**Leo Leiner**
*Mathematics*
An Exploration on Compatibility
Faculty Advisor: Matthew Stover, PhD

**Chong Li**
*Bioinformatics*
Integrative Analytics for Understanding 3D Genome Organization and Functional Impact of Human Genetic Variation
Faculty Advisor: Xinghua (Mindy) Shi, PhD

**Payton Phillips**
*Biology*
Understanding the Influence of Anthropogenic Habitat Modification on Urban Animals: Case Studies of Caribbean Lizards and North American Mammals
Faculty Advisor: Jocelyn Behm, PhD

**Vivek Trivedy**
*Computer and Information Science*
Representation Learning for Visual Tasks: A Study of Attention and Information Selection
Faculty Advisor: Longin Jan Latecki, PhD





# Candidates for Degrees | Graduate

*DEGREE COMPLETED SUMMER 2024*

## MASTER OF SCIENCE

**Caitlyn L. Arvelo**
Information Science and Technology

**Amaka S. Ikemefuna**
Information Science and Technology

**Brian Kibelstis**
Geology

**Anna Kulynych**
Geology

**Michael B. Mistrot**
Chemistry

**Samuel Owens**
Biology

**Katherine Stevenson**
Biology

## PROFESSIONAL SCIENCE MASTER'S

**Philip J. Baldassari**
Bioinformatics

**Christopher P. Merlo**
Biotechnology

**Saamia Farooki**
Bioinformatics

**Rebeccca E. Hancock**
Bioinnovation

**Solomon Scott**
Cyber Defense and Information Assurance

*DEGREE COMPLETED FALL 2024*

## MASTER OF SCIENCE

**Adam Bell**
Information Science and Technology

**Sanchari Biswas**
Computer Science

**Benjamin Carotenuto**
Information Science and Technology

**Patrice Joiner**
Chemistry

**Christopher LeClair**
Biology

## PROFESSIONAL SCIENCE MASTER'S

**Connie Chung**
Cyber Defense and Information Assurance

**Amanda Hauns**
Bioinnovation

**Munashe Holloman**
Bioinformatics

**Mythri Jayaraman**
Forensic Chemistry

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**Mathew Kuruvilla**
Bioinformatics

**Mariano Mattei**
Cyber Defense and Information Assurance

**Anh Ngo**
Biotechnology

**Lucy Shettel**
Bioinformatics

*DEGREE COMPLETED SPRING 2025*

## MASTER OF SCIENCE

**Dilshan Abeykoon**
Physics

**Rebecca Ayanwunmi**
Geology

**Sean Becker**
Geology

**Jaren Canty**
Information Science and Technology Online

**Hung Yu (Henry) Chiu**
Computer Science

**Dassie Galapo**
Computational Data Science

**Andy Gnias**
Computer Science

**Malavika Hennayakage**
Physics

**Yu-Han Hwang**
Chemistry

**Asif Kamal**
Information Science and Technology

**Erlisja Kore**
Information Science and Technology

**Colin Krzystek**
Geology

**Tomisin Latona**
Chemistry

**Hsing-Chen Lin**
Computer Science

**Nick McCloskey**
Information Science and Technology

**Thanh Nguyen**
Computer Science

**Isabella Rosa**
Chemistry

**Ayman Shaikh**
Information Science and Technology

**Hardik Sharma**
Computational Data Science

**Phillip Shebel**
Computer Science

**Daniel Sheehan**
Geology

**Natalie Thomas**
Geology

**Richard Thrutchley**
Physics

**Dang Tran**
Information Science and Technology

## PROFESSIONAL SCIENCE MASTER'S

**Joseph Campagna**
Bioinformatics and Biological Data Science

**Revathi Chundi**
Cyber Defense and Information Assurance

**Jordan Howe**
Bioinformatics and Biological Data Science

**Afrooz Jarrah**
Bioinformatics and Biological Data Science

**Ben Lee**
Cyber Defense and Information Assurance PSM

**Paige Morris**
Bioinformatics and Biological Data Science

**Nhan Pham**
Biotechnology

**Thomas Rodeen**
Forensic Chemistry

**Litzia Sebastian**
Forensic Chemistry

**Alyssa Veneziale**
Bioinnovation

*DEGREE COMPLETED SUMMER 2025*

## MASTER OF SCIENCE

**Ariana Miranda**
Geology

**Muqtadir Moin**
Geology

**Lee Zimmerman**
Biology



CST GRADUATES

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# CONGRATULATIONS TO ALL GRADUATES AND THEIR FAMILIES AND FRIENDS.

## GRADUATION PHOTOS

A photographer from Legacy Photographics is at the ceremony today. Each graduate is photographed as they cross the stage. Legacy Photographics, Inc. will contact each graduate after the ceremony with information on how to purchase photos. If you have any questions, please contact Legacy at 1-800-447-2550 or 610-279-1791 or visit their website www.legacyphoto.com

## ACKNOWLEDGEMENTS

Special thanks to the College of Science and Technology's Office of the Dean, Office of Graduate and Postdoctoral Affairs and CST academic departments for organizing this event.

## MISSION STATEMENT

CST's mission is to inspire, mentor and empower the next generation of scientists through transformative experiences in the classroom, the lab and around the world. In a welcoming and engaging learning environment, the college strives to meet the evolving needs of students by offering innovative academic programs, career development services and research opportunities aimed at broadening access, enhancing academic achievement and fostering life-long success.



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*Please note: This program was printed before final certification of graduation. Therefore, this listing is tentative only. This is a souvenir program. Any errors or omissions are inadvertent, and the College of Science and Technology cannot be held responsible. The transcript is the official record.*