



NATURAL AND APPLIED SCIENCES

LCAS ANNUAL REPORT \ \ ACADEMIC YEAR 2021-22



LOYOLA

UNIVERSITY MARYLAND

Loyola College of Arts and Sciences

**MORE THAN READY.
LOYOLA READY.**



6
Academic
Departments

14
Undergrad
Defined Majors

Up to
\$10k/yr
CPaMS Scholarship

2
Graduate
Programs

20+
Science-based
Student Clubs

8
Pre-health
Student Clubs

663
Pre-health
Students

100%
Dental School
Success Rate

39%
Full-time NAS Faculty are
Women Scientists

954
Undergraduate
Majors

>33%
of Class of 2026 Intended
Majors are NAS-based

Letter from the Associate Dean



This past academic year marked another successful year for Natural and Applied Sciences (NAS), including several NAS faculty members being awarded major grants. NAS faculty expanded their innovative approaches to teaching, provided online and hybrid courses, and enhanced high-impact practices in teaching and learning. We had successful NAS events, celebrated the success of our students, and were delighted to learn about the success of our alumni at the national level. Looking ahead, we are excited to welcome the Class of 2026, the largest and most diverse class in Loyola's history. Members of the incoming class have indicated NAS as their top choice in terms of intended majors. While this is great news for NAS programs, it also requires a greater level of attention to providing the necessary support for the success of our increasingly diverse community of Loyola students and NAS majors. These positive

trends in terms of student demography also require greater focus on Diversity, Equity, and Inclusion (DEI) in everything we do. This includes providing the necessary support for the historically underrepresented groups of students who are entering Loyola with the goal of completing a STEM-related degree. Our successful CPaMS scholars' program is a great model that has shown with right structure in place and with intentional focus on DEI, students from all backgrounds can and will succeed in completing a STEM-related major regardless of all other factors.

Sincerely,

A handwritten signature in black ink that reads "Bahram Roughani".

Bahram Roughani, Ph.D.
Associate Dean, Natural and Applied Sciences (NAS)

NAS Students and Faculty Highlights

- Five out of the eight members selected as the 2022-23 cohort of Loyola DEI faculty fellows are from NAS including professors **Birgit Albrecht, Ph.D. (chemistry)**, **Raenita Fenner, Ph.D. (engineering)**, **Megan Olsen, Ph.D. (computer science)**, **Lisa Scheifele, Ph.D. (biology)**, and **Andrew Schoeffield, Ph.D. (biology)**.
 - In addition to two National Science Foundation (NSF) grants led by professors **Theresa Geiman, Ph.D. (biology)** and **Raenita Fenner, Ph.D. (engineering)** as grant principal investigators (PIs), professor **Sibren Isaacman, Ph.D. (computer science)** was awarded a grant from the National Oceanic and Atmospheric Administration (NOAA) via a partnership with a small business partner, INNOVIM, LLC. Also, the chemistry and biochemistry department received a grant from the Maryland American Chemical Society (ACS) to support student research and activities.
 - Biology faculty published seven papers in the past year with students being co-authors on four publications based on their summer research.
 - Physics faculty members **Andrea Erdas, Ph.D.**, **Mary Lowe, Ph.D.**, and **Joe Ganem, Ph.D.**, each had one publication, with four Hauber fellows
- **Kenneth D. Marcelino, Emily P. Garzon, Ashley E. Dwyer, and Skylar J. Higgs** as co-authors with professor Ganem.
 - Professor **David Binkley, Ph.D.** (computer science) received an International Conference on Software Engineering (ICSE) 2022 Best Artifact Award, and he was invited to be one of two program co-chairs for ICSME 2022, the flagship software maintenance conference.
 - Computer science graduate and former Hauber fellow **Adam Phillippy, Ph.D.**, '02, was recognized as one of TIME's Most Influential People of 2022, while **Lara (Morrell) Kopf**, computer science alum '05, was promoted to senior director for C4 missile defense strategy and growth at Northrop Grumman.
 - Professor **Raenita Fenner, Ph.D.** (engineering) chaired the NAS-wide DEI committee for 2021-23.
 - An interdisciplinary effort by professors **Mary Lowe, Ph.D.** (physics), **David Binkley, Ph.D.** (computer science), and **David Hoe, Ph.D.** (engineering) has led to student research projects as well as novel curriculum development on **quantum computing**.



2021-22 Events

- This year's **Grand Seminar** was held on Tuesday, April 5, when **Nicola Fox, Ph.D.**, the heliophysics division director in the science mission directorate at NASA's headquarters in Washington, D.C., presented an engaging lecture on "What's New and Good Under the Sun." President **Terrence M. Sawyer, J.D.**, gave the opening remarks, and Interim Provost and Vice President for Academic Affairs **Cheryl Moore-Thomas, Ph.D.**, introduced the speaker.
- The **Inaugural NAS Scholars' Recognition Event** celebrates and recognizes the achievements of our NAS scholars, and it was held on April 5. The following NAS scholars were recognized during this event: Hauber Fellows, Haig Scholars, CPaMS scholars, and Choudhury Sarkar-Dey NAS divisional medal finalists and medalist. Moreover, the pinning for University Innovation Fellows (UIFs) was conducted during this event.
- The 2022 Choudhury Sarkar-Dey Medal was presented to biochemistry major **Alejandro Perez**, based on his outstanding academic achievements combined with proven commitment to diversity and engagement with community service and justice.
- The 2022 **Celebration of Science** (April 4-8) included the Grand Seminar and inaugural NAS Scholars' Recognition event, as well as speed mentoring with the Society of Women Engineers, several pop-up classes, a VEX Robotics in Action demo, and more.
- The **CPaMS Scholars Program** provides scholarships of up to \$10,000 annually for academically talented students who demonstrate financial need to study computer science, physics, mathematics, statistics, or data science at Loyola University Maryland. The program continued to thrive during 2021-22 with 13 first-year students and 5 second-year students for a total of 52 students participating in the program during 2021-22.
- **Pre-Health Programs:** Loyola's pre-health students returned to in-person events in full force and much vigor. Several of the speaker events arranged by the Society for Underrepresented Pre-Health Students, Doctors without Borders, Pre-Health Society, and other clubs focused on diversity of health professions and equity in healthcare. The annual events, such as the blood drive with the American Red Cross and suture clinic with the Army, were back and well attended. Health Outreach Baltimore, Loyola's partnership program with Mercy Medical Center, returned to in-person service at three family healthcare departments and provided 35 students an outstanding opportunity to interact with Baltimore families in a clinical setting. The pre-health programs partnered across the campus to introduce a new medical humanities minor into the catalogue. This Health and Human Experience minor supports Loyola students in their gaining a robust understanding of how cultural and social factors impact health and access to healthcare services.
- **Haig Scholars Program 2021:** The Haig Scholars Program recognizes the accomplishments of highly motivated students based on demonstrated academic achievement, leadership experience and potential, commitment to service, community engagement, and personal essay. The 2021-22 cohort of Haig Scholars participated in the fall 2021 Haig Scholars seminar course, which focused on innovative mindset, book discussions, and several guest lectures by highly accomplished speakers.
- The M.S. in **Forensic Pattern Analysis** program was launched with strong first-year enrollment.
- During 2021-22, NAS welcomed several new full-time members to our community: **Henrique Rocha, Ph.D. (computer science)**, **Jason Carbaugh, Ph.D. (biology)**, **Jonathan Fried, M.S.F.S. (forensics pattern analysis)**, **John Hendrix (chemistry and biochemistry)**, **Alan Thoms-Chesley (biology)**, **Nicole Barat (biology lab manager supervisor)**, **Keanna Beal (biology lab technician)**, and **Jordan West (biology lab technician assistant)**.

Thank you to our generous donors

The generosity of the alumni, parents, family, and friends of Loyola College of Arts and Sciences helps bolster the amazing work accomplished by the LCAS faculty, staff, and students. Last year, the LCAS community memorialized a beloved faculty member, Angela Russell Christman, by creating an endowed fund that will support programs and initiatives reflective of Christman's academic pursuits. More than \$75,000 was raised to honor her memory. This story represents one of the many that reflect the benevolence of our amazing community. We are so grateful for the philanthropic commitment made by all our donors.

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