



# NATURAL AND APPLIED SCIENCES

LCAS ANNUAL REPORT \ \ ACADEMIC YEAR 2022-23



**LOYOLA**  
UNIVERSITY MARYLAND

Loyola College of  
Arts and Sciences

**MORE THAN READY.  
LOYOLA READY.**



THE NATURAL AND APPLIED SCIENCES  
CELEBRATION  
OF  
SCIENCE  
WEEK



**7**  
Academic  
Departments

**3**  
Graduate  
Programs

Up to  
**\$10k/yr**  
CPaMS Scholarships

**13**  
Undergrad  
Defined Majors

**20+**  
Science-based  
Student Clubs

**9**  
Pre-health  
Student Clubs

**620+**  
Pre-health  
Students

**75%**  
Dental School  
Success Rate  
(2021-22)

**>40%**  
Full-time NAS Faculty are  
Women Scientists

**>1,100**  
Academic  
Majors

**>34%**  
of Class of 2027 Intended  
Majors are NAS-based

# Letter from the Associate Dean



The Natural and Applied Sciences (NAS) at Loyola University Maryland promotes excellence in math, science, engineering, and health-related fields. Thirty-four percent of the entering class of 2027 have indicated an intended STEM major, suggesting how combining scientific and technical knowledge with liberal arts Jesuit education leads to inspiring students to learn, lead, and serve in a diverse and changing world. This year's annual report highlights include the establishment of the Department of Forensics; the launch of an undergraduate degree in Biohealth and a graduate degree in Biological Forensics; NAS faculty accomplishments in scholarship, grant

productivity, and teaching awards; and notable achievements by NAS alumni and students.

Sincerely,

Bahram Roughani, Ph.D.

Associate Dean, Natural and Applied Sciences (NAS)

## NAS Student and Faculty Highlights

### STUDENTS

Kudos to **Raenita Fenner, Ph.D.**, chair of Loyola's Engineering Department, and students **Emily Hunt, '23** (mechanical/materials engineering), and **Abby Lambert, '24** (philosophy). They represented Loyola in Lockheed Martin's two-day Engineering Ethics Competition in March, securing an impressive second place among 71 competing schools at Lockheed Martin's Bethesda headquarters.

In the 2022-2023 academic year, two of our NAS student-athletes received notable recognition. **Ashley Dwyer, '23** (physics), earned the prestigious title of Patriot League Volleyball Scholar-Athlete of the Year. **Paige Sim, '23** (biology), was honored as the reigning Patriot League Goalkeeper of the Year, having also received recognition as a three-time All-Patriot League honoree and an Academic All-American. Notably, both Dwyer and Sim were also Hauber Research Fellows in 2021.

### FACULTY

**Theresa Nguyen, Ph.D.**, associate professor of chemistry and biochemistry, was honored with the Harry W. Rodgers III Distinguished Teacher of the Year Award, while **Timothy Clark, Ph.D.**, associate professor of mathematics and statistics, received the Faculty Award for Excellence in Transformative Teaching.

Four NAS faculty members received promotions: **Megan Olsen, Ph.D.**, professor of computer science, **Courtney Hastings, Ph.D.**, associate professor of chemistry and biochemistry, **Bu Hyoung Lee, Ph.D.**, associate professor of mathematics and statistics, and **Inge Heyer, Ph.D.**, teaching professor of physics.

Loyola celebrated two NAS faculty members at the recent Bene Merenti Reception. **Bernadette Roche, Ph.D.**, biology, and **Brian Barr, Ph.D.**, chemistry, were recognized at the event for their 25 years of service.

A new Bachelor of Science in Biohealth launched in 2023-24 academic year

spearheaded by biology professors **Michael Tangrea, Ph.D.**, and **Christopher Thompson, Ph.D.**

Professor **David Rivers Ph.D.**, is serving as the chair of the newly established Department of Forensic Science.

Loyola has been awarded a \$1.2 million National Science Foundation grant for its Culturally Responsive Equitable STEM Teaching (CREST) program, funded over five years through the NSF's Robert Noyce Teacher Scholarship Program. This grant will support teacher candidates in developing the skills needed to excel as highly qualified STEM educators in high-needs schools. The Principal Investigator (PI) for the Noyce grant is **Timothy Clark, Ph.D.**, associate professor of mathematics and statistics, with **Afra Hersi, Ph.D.**, dean of the School of Education, **Qi Shi, Ph.D.**, director of the Center for Equity, Leadership, and Social Justice in Education, and associate professor of school counseling, and **Stacy Williams**, chair of the Teacher Education Department, serving as Co-PIs.

# 2022-23 Events



**Adam Phillippy, '02**, received the 2022 NAS Alumni Award during our Grand Seminar reception. Phillippy was named one of *Time Magazine's* "Most Influential People of 2022" for his exceptional work on the Human Genome project. Phillippy began his research as a Hauber Research Fellow at Loyola when he conducted a project titled, "Efficiently Computing Whole Genome Alignments," which was guided by professor **Arthur Delcher**.



In March, the 2023 NAS Student Excellence event took place, honoring four distinguished groups of student scholars. These groups include: the 2023 Choudhury Sarkar-Dey Graduating Medalists, the 2023 graduating Haig Scholars, the 2023 graduating Hauber Fellows, and the 2023 graduating CPaMS scholars. We were delighted to have both President **Terrence M. Sawyer, J.D.**, and Provost **Cheryl Moore-Thomas, Ph.D., NCC**, in attendance.



The Celebration of Science Week occurred from March 27-31. This event encompassed a variety of workshops, lectures, and interactive sessions. Notable features included pop-up classes, an IEEE Club demo, a Robotics Club demo, discussions on Copyright for Creators, speed mentoring sessions with the Society of Women Engineers, a display of the BAJA Motorsports Club racing car, and engaging microbial art activities.



The "Data Science in Everyday Life: Applicability, AI, and Other Trends" panel discussion took place on campus in October 2022. The keynote address was delivered by **David Norton, MBA '95**, a distinguished industry executive and former Harrah's CMO. The panelists offered diverse insights into data science, addressing its everyday life applications, global AI utilization, and emerging data science trends, spanning both industry and government sectors.



We welcomed our largest and most diverse class of 34 CPaMS Scholars, marking our most competitive year with the highest applicant numbers in history. CPaMS Scholars fosters a close-knit community for students majoring in computer science, mathematics, statistics, data science, or physics. Scholars share specific activities and courses, supported by mentors and advisors. Learn more at [loyola.edu/cpams](http://loyola.edu/cpams).



The Health Outreach Baltimore program, which continued its impactful partnership with Mercy Medical Center for its ninth year. The Pre-Health community now boasts nine clubs, including the Pre-Health Society, Society for Underrepresented Pre-Health Students, and Doctors without Borders. Impressive acceptance rates in a variety of medical fields have been achieved at levels well above the national averages.

## Bachelor of Science in Nursing (BSN)

Loyola officially submitted a proposal to the Maryland Higher Education Commission (MHEC) for the introduction of a Bachelor of Science in Nursing (BSN). Pending additional approvals and accreditation, this program will be developed in partnership with Mercy Medical Center, which will offer clinical placements at its

downtown Baltimore campus, along with additional resources and assistance. The new program will be part of the NAS division, and will benefit from the expertise of **Majju Lehmijoki Wetzel, Ph.D.**, director of Pre-Health Programs, while the Department of Biology is serving as its initial academic home.



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4501 N. Charles St.  
Baltimore, MD 21210

