



# NATURAL AND APPLIED SCIENCES

LCAS ANNUAL REPORT \ \ ACADEMIC YEAR 2019-20



**LOYOLA**  
UNIVERSITY MARYLAND

Loyola College of  
Arts and Sciences

**MORE THAN READY.  
LOYOLA READY.**



**6**

Departments

**6**

Interdisciplinary  
Majors

**646**

Pre-Health Students  
(as of May 2020)

**2**

Graduate Programs

**58**

Full-Time Faculty

**22**

Part-Time Faculty

**27%**

of all Undergraduate  
Majors

**48%**

of all Loyola College  
Majors

# Letter from the Associate Dean



Natural and Applied Sciences has been impacted by two major events during the past 12 months. The global pandemic has transformed how we teach, learn, and conduct research, engage with one another, and serve our community. At the same time, the renewed national movement for racial justice is a motivation to reexamine how we can contribute to the efforts aiming at meaningful and systemic change in support of social justice. In the case of Natural and Applied Sciences (NAS), this may include reexamining ways to level the playing field for the success of all students majoring in STEM-related fields of study. Our thriving NAS community has continued its progress towards a brighter future. I like to highlight three significant new NAS initiatives during the past year: the establishment of the very first endowed chair

position in sciences, the formation of the very first endowed divisional medal in the university, and the launch of the Haig Scholars Program. There are more achievements and success stories about our NAS community members in this annual report. Moreover, the extended version of the Natural and Applied Sciences annual report is available online, and I invite you to read more about NAS community achievements during 2019-20 at [loyola.edu/naturalsciences-report-2020](https://loyola.edu/naturalsciences-report-2020).

Sincerely,



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

## Inaugural Programs and Initiatives

### CHOUDHURY SARKAR-DEY SUPPORT FUND

The Choudhury Sarkar-Dey Support Fund for Natural and Applied Sciences was established in 2019 through the philanthropy of professor of mathematics and statistics **Dipa Sakar-Dey, Ph.D.** A portion of the fund supports NAS students and part funds the Choudhury Sarkar-Dey Medal, the first divisional medal at Loyola University Maryland. Biology major Sarah Kujala, '20, received the inaugural medal. Additional 2020 medal nominees included Ann Ernst (Engineering), Chiara Maalouf (Computer Science), Zac Metzler (Mathematics and Statistics), Ethan Mullen (Physics), and Jennifer Valencia (Chemistry and Biochemistry).

### NAS ENDOWED PROFESSOR

**Michael Tangrea, Ph.D.**, a 1996 graduate and biology major, returned to Loyola in August as the NAS division's first endowed professor. He will help to expand scientific research in biohealth and promote economic and entrepreneurial success in the state of Maryland. This was made possible by a \$500,000 grant awarded to Loyola by the Maryland E-Innovation Initiative Fund (MEIF), with matching \$500,000 raised by Loyola's Advancement to assist with initiatives fostering innovation and entrepreneurship at the University.

### HAIG SCHOLARS PROGRAM

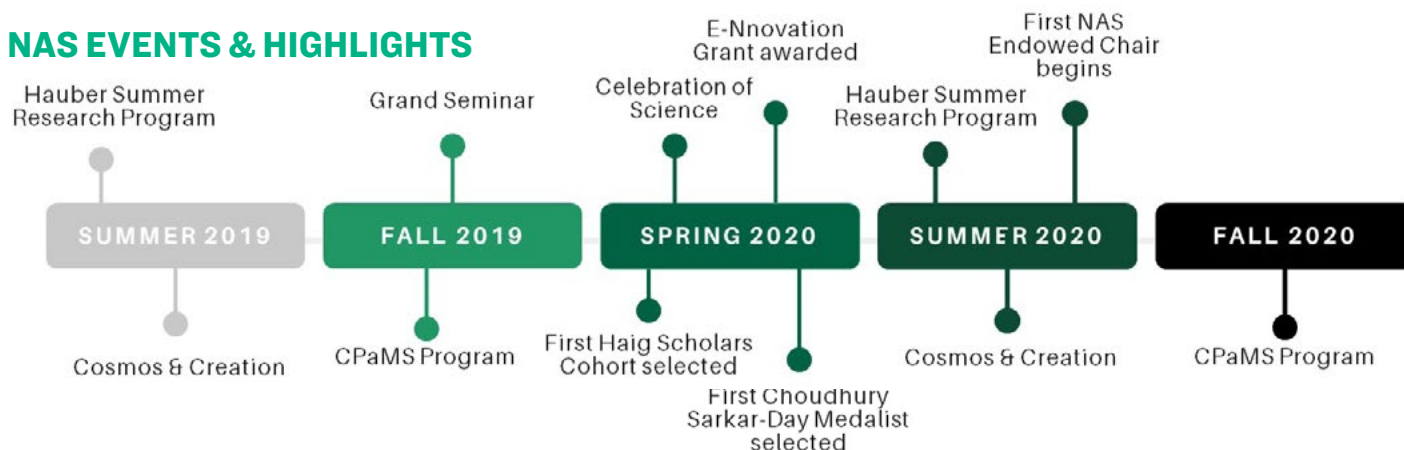
The Haig Scholars Program celebrates student achievement and the legacy of beloved faculty member **Rev. Frank Haig, S.J.**, professor *emeritus* of physics. In spring 2020, the NAS division designated 23 students as the university's inaugural Haig Scholars. The juniors and seniors were nominated by faculty from all six departments within the Natural and Applied Sciences and chosen based on demonstrated academic achievement, leadership experience and potential, commitment to service, and community engagement. The scholars will participate in a 1-credit seminar course during spring 2021 and receive recognition at Commencement.

### MASTER OF SCIENCE IN FORENSIC PATTERN ANALYSIS

A new Master of Science in Forensic Pattern Analysis degree program began active recruitment in fall 2020. "Loyola's program is anticipated to be one of the first of its type in the United States, positioning the University to become a top destination for education and training in forensic pattern evidence," said **David Rivers, Ph.D.**, professor of biology. Learn more at [loyola.edu/forensic](https://loyola.edu/forensic).



## NAS EVENTS & HIGHLIGHTS



# 2019-20 Events

### JUNE 2019 & JUNE 2020

Cosmos & Creation Conference was held on campus during summer 2019 with keynote speaker Robert Bishop, Ph.D., professor of Philosophy and History of Science at Wheaton College, who presented “A Trinitarian Doctrine of Creation and Science.” The 2020 conference was held in a remote format with keynote speaker Philip Clayton, Ph.D., Ingraham Professor, Claremont School of Theology, presenting public lectures on the topic “In What Sense is the World Spirit?”

### JULY 2019

The International Astronomy Teaching Summit (IATS) was hosted by the physics department in July 2019. Professor **Inge Heyer, Ph.D.**, was the lead of the local organizing committee, supported by lab manager **Barry Dalrymple**; 82 guests attended, most of whom were college, high school, and planetarium instructors, and the successful conference increased Loyola’s visibility in the astronomy community.

### SEPTEMBER 2019

The September 2019 Grand Seminar featured keynote speaker Elodie Ghedin, Ph.D., professor of epidemiology and global public health, molecular parasitologist and virologist, and 2011 MacArthur Fellow, who presented “(Microbial) Networking Going Viral.”

### JANUARY 2019

Health Outreach Baltimore celebrated five years at Mercy Medical Center with a special event and presentation by Dr. Joshua M. Sharfstein, “How to Get More Health out of Healthcare” on January 23, 2020. Attendees included HOB advocates and leaders past and present, university leaders, and health care partners from Mercy Medical Center.

### FEBRUARY 2020

Celebration of Science was held in February 2020 and included guest speakers, a Data Science networking and panel event, pop-up

classes, robotics and physics club demos, and Loyola Motorsports’ BAJA team display. The 2019 Hauber Summer Research Fellowship Program brought together 15 students across all NAS departments to engage in undergraduate research with faculty mentors supported by the Hauber endowment and contributions from Whiting Turner, Grace, the Lowe Family, and CPaMS Scholars program. In light of the COVID-19 pandemic, on-campus research was not possible during summer 2020. However, 14 dedicated students and faculty adjusted initial project proposals and conducted and shared research remotely. The 10-week program culminated with recorded presentations and live Q&A sessions held via Zoom, with attendance by industry partners from Whiting Turner, Grace, and Booz Allen Hamilton, and members of the Loyola community. Read more at [loyola.edu/hauber](http://loyola.edu/hauber).

### PRE-HEALTH PROGRAMS

It was a record year for Loyola’s Pre-Health Programs in terms of acceptance rates and scholarships. In 2020, 91% of Loyola’s medical school applicants to allopathic or osteopathic medical schools and 67% of applicants to dental school received an acceptance. Similarly, strong numbers were seen with other health professions applications, including those to physician assistant and optometry schools as well as to top-ranked graduate programs in nursing. Students also received major scholarships,

such as Ph.D. research funding to dental school, full merit scholarship to medical school, and full Air Force health professions scholarship to osteopathic medical school.

**PRE-HEALTH**  
Program



### COVID-19

The NAS division quickly pivoted to remote instruction during spring 2020. Faculty worked diligently to deliver lab-based courses in a virtual environment, and student clubs stayed connected—from learning new technical skills with the UAV club and Loyola Motorsports BAJA SAE team to forming a summer journal club for Pre-Health interests. Loyola’s NAS community also led efforts to utilize 3D printers to manufacture face shields for the local medical community.

# Thank you to our generous donors

We are tremendously grateful for the philanthropic commitment alumni, parents, family, and friends made to Loyola College of Arts and Sciences in 2019-20. This past year, we saw the creation of the Choudhury Sarkar-Dey Natural and Applied Sciences Support Fund, which sustains an annual student award and funds student programming and activities within the Natural and Applied Sciences division. There was also tremendous philanthropic commitment to existing funds and scholarship that were further bolstered by additional support. The students, faculty, and staff are so thankful for the continued generosity of our amazing community.

[loyola.edu/loyola-college](http://loyola.edu/loyola-college)

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