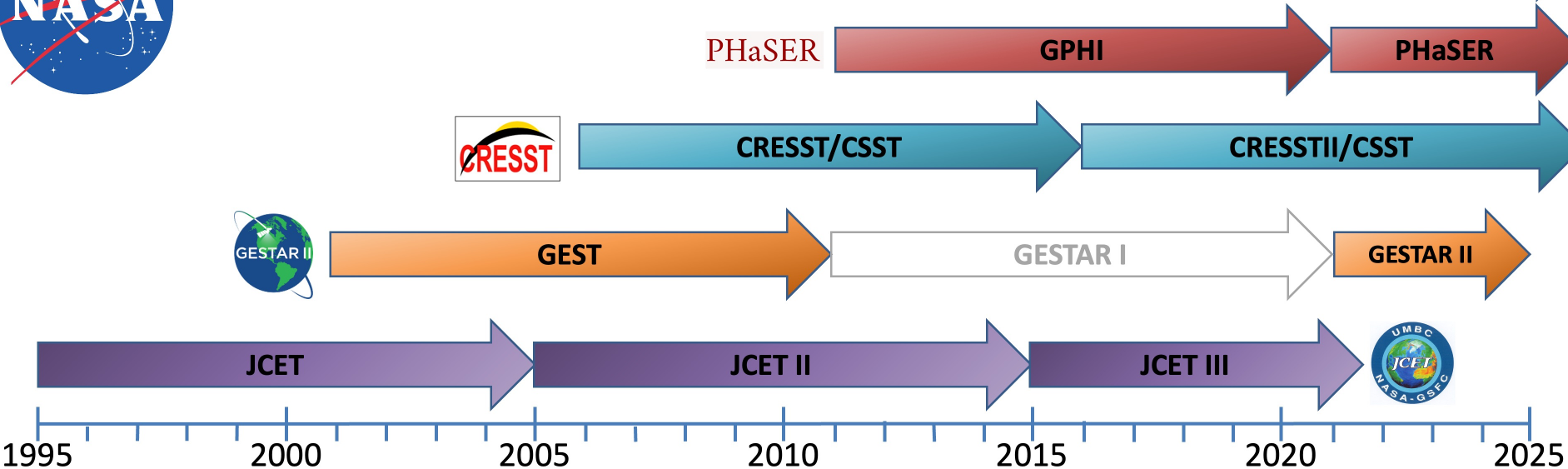


**UMBC Earth & Space Institute**



**Pipeline and Impact:**

Over 250 scientists and research faculty currently partnering with NASA civil servants are employed under UMBC/GSFC Cooperative Agreements

About 60 former UMBC scientists and research faculty have transitioned into Civil Servant roles

About 30 UMBC scientists and research faculty are actively working on current NASA Space Missions:

- PACE, GEO-XO, DSCOVER, MBARS, JUNO, Aqua-AIRS, Aura/OMI, ICE Sat-2, ROMAN, SMAP, SNPP/VIIRS, TSIS-1, TSIS-2

**Sibasish Laha***UMBC**Center for Space Sciences  
and Technology***Brad Cenko***NASA Goddard**Astrophysics  
Science Division***Crocetta Argento***UMBC**Division of Research and  
Creative Achievement*

- **ESRA** was established in 2019 as a centralized shared resource to support UMBC’s Cooperative Research Centers with NASA Goddard Space Flight Center with administrative pre-award and post-award support.
- ESRA Director **Margo Young** Recipient of 2023 USM Board of Regents Exempt Staff Award for Effectiveness and Efficiency



**Margo Young**  
Director of ESRA  
✉ [mayoung@umbc.edu](mailto:mayoung@umbc.edu)  
410-455-1764



**Camilla Hyman-Waters**  
HR Business Manager/Analyst  
✉ [hyman1@umbc.edu](mailto:hyman1@umbc.edu)  
410-455-8027



**Catherine Manalansan**  
Executive Administrative Assistant I  
✉ [cmanalan@umbc.edu](mailto:cmanalan@umbc.edu)  
410-455-8812



**James Hale**  
Assistant Director, ESRA  
✉ [jhale4@umbc.edu](mailto:jhale4@umbc.edu)  
410-455-2573



**Judith Laferriere**  
Financial Business Manager/Analyst  
✉ [jslaferr@umbc.edu](mailto:jslaferr@umbc.edu)  
410-455-5829



**Domonique Pitts**  
Business Services Specialist  
✉ [dpitts@umbc.edu](mailto:dpitts@umbc.edu)  
410-455-3832



**Amy Houghton**  
Communications Manager  
✉ [amyh@umbc.edu](mailto:amyh@umbc.edu)  
410-455-8899



**Dave Lucadamo**  
Analyst  
✉ [lucadamo@umbc.edu](mailto:lucadamo@umbc.edu)  
410-455-5996



**Paula Tanabe**  
Analyst  
✉ [ptanabe@umbc.edu](mailto:ptanabe@umbc.edu)  
410-455-6329

Approaching 30 Years of large-scale partnerships between  
NASA Goddard Space Flight Center (GSFC) and UMBC

**CSST** – Center for Space Sciences and Technology (GSFC 660, 690)

- *CRESST established in 2006, extended in 2021*
- *Director: **Don Engel**, CSEE*

**GPHI** – Goddard Planetary Heliophysics Institute (GSFC 670)

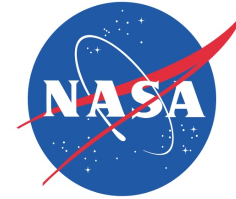
- *Established in 2011, renewed in 2021*
- *Director: **Jan Merka**, GPHI*

**ESI** – Earth & Space Institute

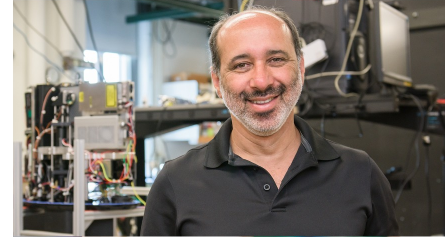
- *Established in 2017*
- *Director: **Vanderlei Martins**, Physics*

**GESTAR II** – Goddard Earth Sciences Technology & Research Center (GSFC 610)

- *Established in 2021*
- *Director: **Charles Ichoku**, GES*



UMBC



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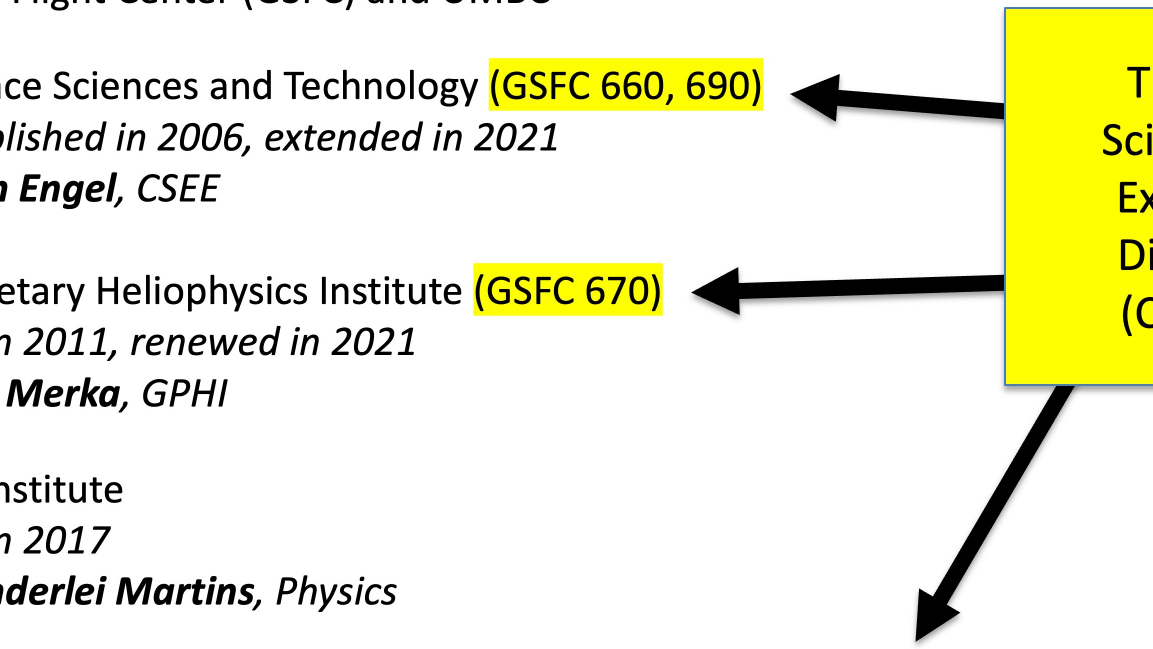
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The entire  
Sciences and  
Exploration  
Directorate  
(Code 600)

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Departments in each of UMBC's  
three colleges:

- **COEIT: Engineering/IT**
- **CNMS: Natural/Math. Sciences**
- **CAHSS: Arts/Humanities/Soc.Sciences**

- ESI was established in 2017 to develop new science and algorithms, design, development, and testing of satellite, aircraft, and ground-based instrumentation for Earth and Space science observations.
- ESI’s goal is to leverage UMBC’s faculty, students and physical resources with NASA, NOAA, and private companies to develop competitive Earth and Space science projects.

ESI Director and PI: **Vanderlei Martins**, Professor, Physics

- <https://esi.umbc.edu>

Congressional Appropriation:

- \$1,000,000 in FY23

Impact:

- Develop cost-effective satellite, aircraft, and ground-based instrumentation for atmospheric and climate change observations.
- Attract and support a high-level workforce to train next-generation students.



# UMBC provides Seed Funding Opportunities

## Center and Institute Departmentally-Engaged Research (CIDER)

- \$50k/award, Due October 15, 2024
- Must be led by a UMBC faculty member whose primary appointment is in a center.
- Meant to support partnerships between units without degree programs and the rest of the university. May include additional partners (civil servants, etc.)

2 out of 4 CIDER Awards from the latest cycle:

- “Harnessing the Power of Machine Learning to Discover What Powers Distant Galaxies” – PI Antara Basu-Zych (CSST)
- “Model Development for Polarimetric Remote Sensing of Clouds in the Thermal Infrared” – PI Richard Xu (GESTAR-II)



# UMBC provides Seed Funding Opportunities

## Strategic Awards for Research Transitions (START):

- \$25k/award, due early 2025

2 out of 13 awards from most recent cycle:

- “Space Weather Effects on Ionospheric E-region Electron Density as observed by Global Navigation Satellite System Radio Occultation Missions” – PI Cornelius Salinas (GESTAR II)
- “Benchmarking Satellite Orbital Drag During Extreme Magnetic Storms: A Look to the Future With an Eye in the Past” – Denny Oliveira (GPHI)

# UMBC provides Seed Funding Opportunities

## UMBC Funding to Include Undergraduates in Research:

- Supplement for Undergraduate Research Experiences (SURE)
- Undergraduate Research Awards (URA)
- Federal Work Study (FWS)

## Other Forms of Interaction:

- NASA-based faculty teaching at UMBC
- NASA-based faculty and civil servants on dissertation/thesis committees
- Summer internship programs at Goddard
- Postbac programs at Goddard
- UMBC Faculty Sabbaticals at Goddard
- Partnering on Papers, Grant Proposals, Research Events, etc.