

Johnny Durkin

M.S. Space Systems Design, Systems Engineering



Systems Engineer, Interplanetary Lab, NASA Cubesat Launch Initiative

The 6,800 square-foot Interplanetary Laboratory takes the makerspace approach and extends it to full lifecycle space-flight hardware and software development. NASA's CubeSat Launch Initiative provides opportunities for CubeSats built by U.S. educational institutions, and non-profit organizations, including informal educational institutions such as museums and science centers to fly on upcoming launches. Through innovative technology partnerships NASA provides these CubeSat developers a low-cost pathway to conduct scientific investigations and technology demonstrations in space, thus enabling students, teachers, and faculty to obtain hands-on flight hardware design, development, and build experience.

Research Assistant, Luminosity Lab, Interplanetary Initiative, Lunar MVI Project

A Minimum Viable Infrastructure (MVI) will be defined for several use cases of sustained human lunar presence (e.g. science, mining, interplanetary travel) by identifying a suite of variables for each case (e.g. water, comms, power, security, waste disposal, accommodations, ventilation, and protection against external elements). The use case MVIs will be overlaid and the resulting Venn diagram will help model the overall MVI which will inform decision-making for establishing and sustaining human presence on the Moon.

The Luminosity Lab was founded in 2017 at the request of Arizona State University President, Dr. Michael Crow, and Dr. Sethuraman Panchanathan, then ASU's Executive Vice President of Research and currently the Director of the National Science Foundation. They envisioned an interdisciplinary 'skunkworks' lab, powered by student-led innovation, embodying a new paradigm of college-based R&D dedicated to producing cutting-edge solutions for some of the world's most intricate challenges.

Engaged in tackling large-scale projects across sectors like healthcare, education, energy, and sustainability, the lab's growth has allowed for expansion, including Luminosity branches operating throughout Arizona, and in Boston, Tennessee, and Ghana. Today, Luminosity maintains an internal portfolio of projects while also conducting corporate-sponsored R&D for some of the world's leading global corporations. Over the years, Luminosity's student teams have exhibited their prowess in generating global-level innovations, claiming 1st place honors in the XPRIIZE in 2020 and Red Bull's Global Innovation Challenge in 2022.

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B.S. Astrobiology and Biogeosciences



Independent Researcher, Neuer Oceanography Lab, NASA Space Grant

The Neuer lab team includes undergraduate, graduate students, and post-docs studying the link between plankton diversity, trophic dynamics and the biological carbon pump in the modern and ancient oceans. Our research focuses on an extremophile primary producer which resides in the ice of the arctic. *Melosira arctica* survives both when the sea ice freezes in the fall and when it melts in the spring. We are investigating growth rates of *Melosira arctica* in different light intensities, salinities, and temperatures to mimic the changing conditions of its environment as the seasons change. We hope to learn about the physical adaptations that have allowed the cryophilic algae to thrive in such a wide range of environments and examine what that could mean for the potential of life throughout the solar system's icy worlds such as Europa and Enceladus. Our research was presented at the 2018 AZ NASA Space Grant Symposium.

The ASU/NASA Space Grant Program employs approximately 30-50 undergraduate students for the academic year, working alongside upper-level graduate students, diverse faculty members, as well as scientists and engineers. The program supports undergraduates by giving them opportunities to earn money while gaining valuable experience participating in research projects and educational outreach activities. NASA Space Grant seeks applications from science, technology, engineering and mathematics (STEM) fields.

Microbiologist, Garden State Labs, Hillside, NJ

Garden State Laboratories, Inc. is a certified independent water and environmental testing laboratory. We test drinking water, wastewater, biosolids, sludges, soils, solid wastes, hazardous wastes and monitoring wells. In addition, we test recreational bathing waters such as swimming pools, whirlpools, hot tubs, lakes, and beaches.

We analyze for bacteria and chemicals.

With 80 years of involvement in these fields, Garden State Labs would like to share our experience, expertise and valuable insight in these branches of environmental science and public health. This site will continue to expand as a resource for those interested in finding up-to-date and hard-to-find information relating to methodologies, regulations and testing capabilities in these fields.

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Startup Founder



Galactic Recyclables, LEVL5 Space Dock Ideate Program, NSU & Space Foundation

LEVL5: SPACE DOCK at NSU™ is a partnership between the Alan B. Levan | NSU Broward Center of Innovation and Space Foundation. Through tailored programming and specialized events, we prepare entrepreneurs for growth into the evolving global space ecosystem and connect South Florida to scalability opportunities and supply chain insertion. Space Foundation is a nonprofit advocate organization founded in 1983, delivering excellence in education, collaboration, and information to advance the global space community.

The objective of this company is to create a closed-loop 3D printing system for recycling excess cargo packaging waste into feedstock for creating single use items for astronaut crews. The proposed system aims to address the challenges of waste management in space by recycling plastic waste from packaging materials into usable feedstock for 3D printing. The closed-loop system includes a shredder, extruder, and 3D printer, and is designed to be integrated into the existing infrastructure of space habitats. The proposed system not only reduces the amount of waste generated in space, but also enables the creation of customized and on-demand single-use items for astronaut crews, ultimately improving their quality of life and reducing mission costs.

Beach Bike Boys, Micromobility Franchise Startup, Long Branch, NJ

Beach Bike Boys is a micromobility company whose mission is to reduce carbon emissions by getting cars off the road. By combining principals of direct to consumer service, micromobility, and traditional beach bike rentals, this company served the Monmouth county beach front delivering bikes, e-bikes and scooters to happy customers along the boardwalks of Long Branch, Sea Bright, Asbury Park, Deal and Atlantic Highlands. This company raised over hundreds of thousands of dollars in capital and served hundreds of customers throughout the COVID-19 pandemic.

Jumpstartup, AI Driven Entrepreneurial Consulting Service, Venture Devils, Tempe, AZ

Jumpstartup's goal was simple. To make it easier for anyone to start a business from scratch. Born from the efforts of two small business owners and ASU alumni, Jumpstartup created a guide and system for starting a business from scratch. The company developed through the Thunderbird School of Global Management's Venture Devils program where the team won Pitch Playoffs earning the chance live pitched to community leaders, investors and other business leaders.

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Artist



Look Up Thesis, Barrett the Honors College, Arizona State University

"Look Up" is a full length hip hop concept album that follows a day in the life of protagonist Ozy Mandias, except with a science fiction twist. He has been abducted by an alien who is going through his memories. The project includes a full length script and lyric companion as well as a package mood visuals to go along with the album. This project developed under the tutelage of Roger Mantie, PhD and Chris Norby. The first of many full length LP's and EP's for Durkin.

Roger Mantie's teaching and scholarship, informed by his fourteen years as a school music educator in Manitoba, emphasizes connections between schooling and society, with a focus on lifelong engagement in and with music and the arts. He is on the editorial boards of Bulletin of the Council for Research in Music Education, Action, Criticism, and Theory for Music Education, International Journal of Community Music, Journal of Popular Music Education, and the Canadian Music Educator, and is co-editor of the Oxford Handbook of Music Making and Leisure (2016) and the Oxford Handbook of Technology and Music Education (2017).

Christopher Norby has established himself as a composer, performer and teacher through a wide range of international artistic experience in live theatre, concert composition, video game music, film/TV scoring and live performance. His commissioned concert and theatre works have been performed in major venues and festivals internationally (including performances at the Royal Festival Hall and Covent Garden, London, the National Gallery of Ireland, Dublin, and at the International Rostrum of Composers concerts, Slovenia). As a film and media composer, Christopher has completed scores for multiple iOS and Android releases and national USA television. He was a co-founder of the theatre ensemble AnNua Productions (Ireland, Australia), with which he continues to work, and in 2017 established Ensemble Kabarett in Phoenix - a multimedia live performance group that is gaining recognition for innovative and entertaining productions.

Creative Director/Artist, Celestial Industries, Tinton Falls, NJ

Celestial Industries is a music, events and entertainment company based out of Tinton Falls, NJ. Serving as a DJ, music producer, artist, executive producer and creative director, Durkin wears many hats for the creative collective. The group has created successful events, parties, concerts, albums and music and arts festivals in the Monmouth County area including the Soundwav Music Festival and Fall Frequencies concert and laser show.

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ASU Extracurriculars



Founding Father, Scholarship Chair, Sigma Pi Beta Kappa Chapter

For more than 85 years, fraternities and sororities have played an important role at Arizona State University. ASU's more than 70 Greek-lettered organizations continue to move forward as the largest membership based, multi-faceted community on campus. Our fraternity and sorority members come from every imaginable background, but are united in continuous pursuit of our shared values. Sigma Pi's Beta Kappa Chapter earned their national charter in 2016 and went on to win Chapter of the Year in 2018.

Research Fellow, ASU-Sante Fe Institute Center for Biosocial Complex Systems, Tempe, AZ

Arizona State University and the Santa Fe Institute have launched a joint research and education program that is advancing scientific theory at the intersections of biological and social systems, with a focus on practical application in science and policy. This center, designed as an international incubator of solution-driven transdisciplinary research, brings together scholars from one of the country's most innovative research universities with experts from SFI's worldwide complexity community. The center aims to provide researchers and policymakers with the tools to make better predictions, and design better interventions, that make our cities and institutions more sustainable and more amenable to human productivity, creativity, and progress.

President, Astrobiology Research and Education Society, Arizona State University

Serving as the president and one of the founding members, this ASU club shared research, experience, outreach and fellowship with astrobiologists, alien enthusiasts, and science curious students across ASU's Tempe Campus.

Science Lead, CHASM Remote Hot Springs Monitoring Project, Black Rock Desert, NV

CHASM was a School of Earth and Space Exploration capstone project combining the efforts of electrical engineers, astrobiologists, system engineers, and instrumentation experts to build a satellite linked remote monitoring system for the extremophile biome of the Black Rock Desert's hot springs.

Marketing Assistant, ASU Marketing Hub, Arizona State University

The ASU Marketing Hub serves as the core brand marketing team for the university. Responsible for all brand attributes for the institution at large, the Marketing Hub team also supports individual college and stakeholder groups around the school. The ASU Marketing Hub sought out Convince & Convert to create an ongoing training series to keep all ASU marketers on point with the current trends in digital marketing.

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Science Outreach



Lead Scientist, New Logic Marine Science Camps, NJ

New Logic's Marine Science Camp is an award winning K-8 science summer camp program that focuses on the preservation of the marine ecosystem through active hands-on learning. Curriculum includes Manatees, Sharks, Undersea Volcanoes, Fish ID and much more! Data collection is submitted to their Citizen Science project where campers help ongoing research on. The camp provides real world experience on water quality, seining and environmental awareness in an outdoor learning environment along the beaches of the Jersey Shore and beyond.

Volunteer Assistant, Ask an Astrobiologist Podcast, SAGANet.org now NASA

Ask an Astrobiologist is an almost monthly, interactive, talk show where our guest astrobiologist will answer questions from our host, Dr. Graham Lau, and audience members like you! Each episode dives deep into our guest's life, early career, and current scientific endeavors, followed by audience questions from Twitter and YouTube. Each session lasts about an hour. This show is a collaboration between Blue Marble Space and the NASA Astrobiology Program.

Presenter, Outreach Volunteer, NASA Space Grant

An important goal of NASA Space Grant is to promote science, technology, engineering, and math [STEM] literacy to the public through informal education activities or the production of informal education materials. For science and engineering applicants, informal education will be separate from the research project. For other applicants, the informal education may be a key component of the main project proposal. Please click on Current and Past Outreach Events for examples of some of this year's activities.

ASU/NASA Space Grant Interns are required to participate in informal education/outreach as part of their internship. They may either participate in an on-campus event or implement their own activity if it fits the informal ed/outreach criteria and is approved by the Space Grant Office.

Outreach Volunteer, School of Earth and Space Exploration, Night of the Open Door

Earth and Space Exploration Evening and Open House is a free annual event hosted by the School of Earth and Space Exploration with their graduate students on the ASU Tempe campus each fall. This event is open to students ages five and up, families, educators, and anyone interested in Earth and space. Highlights include talks with scientists, interactive exhibits, 3D planetarium shows, and student science exhibits, plus stargazing with telescopes to explore the night sky.