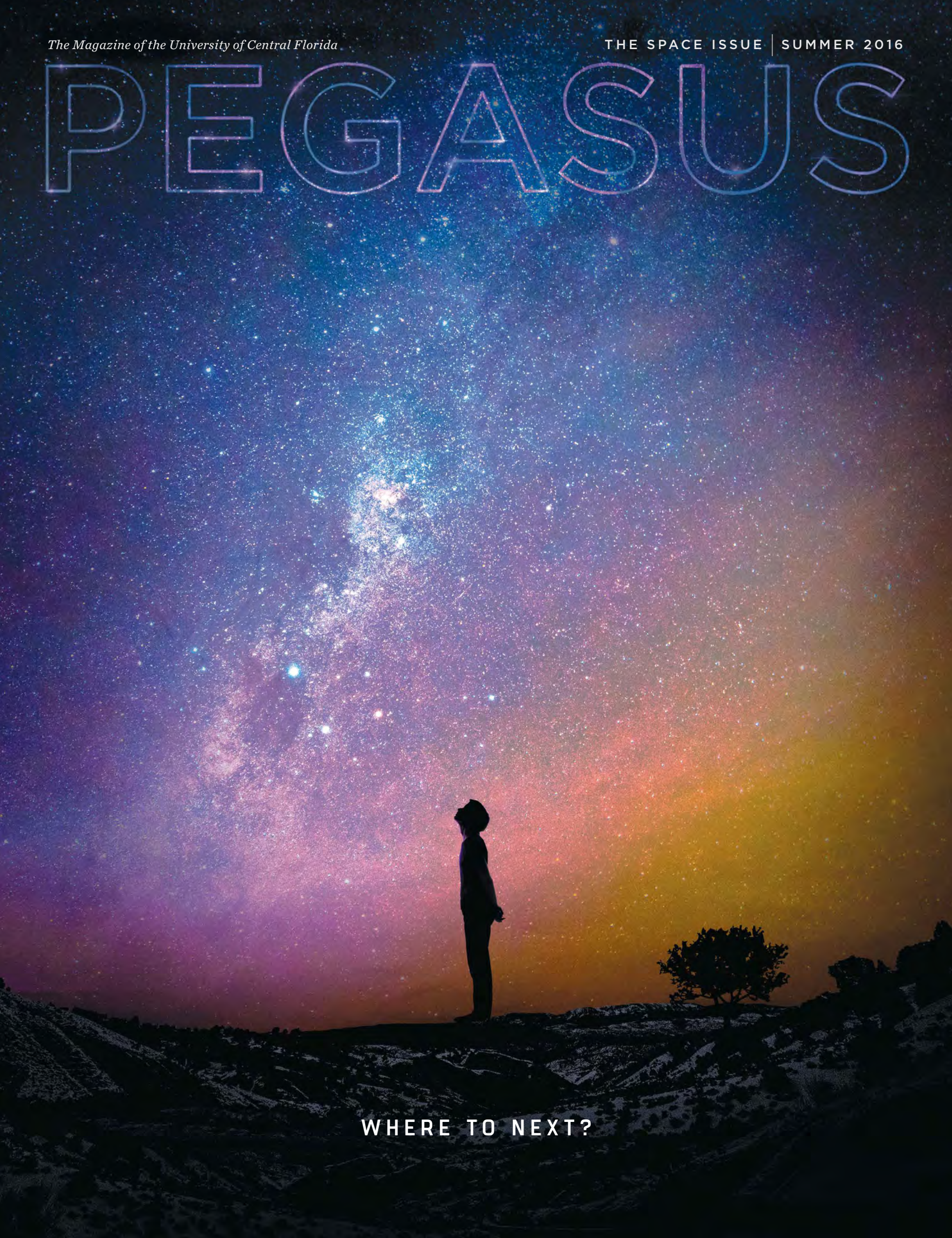


PEGASUS



WHERE TO NEXT?



ILLUSTRATION BY JOSHUA NOOM

NOTE: We know the constellation here isn't accurate, but we didn't feel right turning our beloved winged horse upside down. To see how Pegasus looks in the night sky and to learn more about the constellation, go to ucf.edu/pegasus.

Written in the Stars

UCF's motto is "Reach for the Stars," and the constellation Pegasus shows us the way. For centuries, it has been a guide for travelers and astronomers alike, whether by land, sea or air.

PEGASUS

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Emails to the editor should be sent with the writer's name, graduation year, address and daytime phone number to pegasus@ucf.edu.

Letters may be edited for length and clarity, and may be published in any medium. Due to volume, we regret that we cannot reply to every letter.

MOVED RECENTLY? NEED TO UPDATE YOUR INFO?

Update your contact information:
ucfalumni.com/contactupdates



UCF STANDS WITH ORLANDO.

Just as this issue of *Pegasus* was scheduled to print, the Pulse nightclub in downtown Orlando was attacked.

All of UCF grieves with the victims and their friends and families. As President Hitt wrote the day of the attack, "I tell our LGBTQ students, faculty, staff and alumni this: You are not alone. Your university stands with you."

In future issues, we will share memories of the Knights who were killed and show how the UCF family rallied to help our hometown recover.

What we know today is this: Orlando is UCF's home, and the Orlando community is the UCF community.

**Together, we grieve.
Together, we heal.
Together, we stand.**

— The staff at *Pegasus*

"In attempting to make sense of this senselessness, my mind is drawn to wise words Dr. Martin Luther King, Jr. spoke nearly 50 years ago.

When our days become dreary with low-hovering clouds of despair, and when our nights become darker than a thousand midnights, let us remember that there is a creative force in this universe, working to pull down the gigantic mountains of evil, a power that is able to make a way out of no way, and transform dark yesterdays into bright tomorrows. Let us realize that the arc of the moral universe is long but it bends toward justice.

As they were true then, so are Dr. King's words true today."

— An excerpt from President Hitt's June 12 letter to the UCF community

#ORLANDOUNITED

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KNIGHT VIEW

Dedicated on April 25, 1996, the Robinson Observatory provides research and educational opportunities for students and the community alike. The facility, which houses a 20-inch telescope, offers students a training ground to collect solid data and conduct original research. And the popular “Knights Under the Stars,” a series of free events held throughout the academic year, invites the community to learn more about the solar system from knowledgeable volunteers.

“People will literally gasp the first time they see an up-close view of Saturn’s rings or craters on the moon. It’s very satisfying for us to be able to bring the night sky to people in such a visceral way.”

— Yan Fernandez, associate professor of planetary science and director of the Robinson Observatory

88

Number of constellations

100 billion+

Number of stars in the Milky Way

100-200 billion

Number of galaxies seen from the Hubble telescope

1 trillion

Potential number of galaxies in the universe

100 sextillion

(100,000,000,000,000,000,000)

Estimated number of stars in the universe

Sources: Space.com and Forbes



INTERGALACTIC SYMPHONY

In April, UCF Celebrates the Arts offered a multimedia performance that combined music, science and visual art. Titled “The Warped Side of the Universe” and held at the Dr. Phillips Center for the Performing Arts, the event featured work from composer Hans Zimmer, astrophysicist Kip Thorne and visual effects artist Paul Franklin, who worked together on *Interstellar*. Through music, videos, lectures, artistic renderings and computer simulations, the trio produced a journey through warped space and time, including colliding black holes, exploding supernovas and the birth of our universe.

“Thirty-five years ago, I had this idea of playing in a planetarium. I didn’t want anyone to watch me. ... So even though I have my friends with me here tonight ... [I hope you] go on this journey with us.”

— Hans Zimmer, Oscar-winning composer

9,541

Total number of people who attended UCF Celebrates the Arts

2,099

People who attended “The Warped Side of the Universe”

10

Musicians

4

Hours for tickets to sell out

2

Visual artists

1

Astrophysicist



GO FOR LAUNCH

On April 2, 2016, a team of UCF scientists made history as their experiment became the first to go to space aboard Blue Origin's *New Shepard*. The project, known as MEDEA and led by Professor Joshua Colwell, examines how space dust builds up to form planets and the rings around planets. The experiment is one of several that Colwell, along with Assistant Professor Adrienne Dove, Post Doctoral Associate Julie Brisset (pictured bottom right) and a team of UCF students, has worked on. The others include four experiments that were conducted on parabolic flights and two on the International Space Station — earning the team another historic distinction: the first to partner with Blue Origin and the ISS to conduct research.

“We want to understand how planets form and what conditions are needed to form planets — in particular, planets that could be habitable like Earth.”

— Joshua Colwell, UCF professor

339,138

Height reached in feet (2 miles above the Kármán line, which marks the boundary of space)

3,635

Feet at which rocket engine was re-ignited for landing

11

Minutes from liftoff to landing

3

Minutes in high-quality microgravity environment

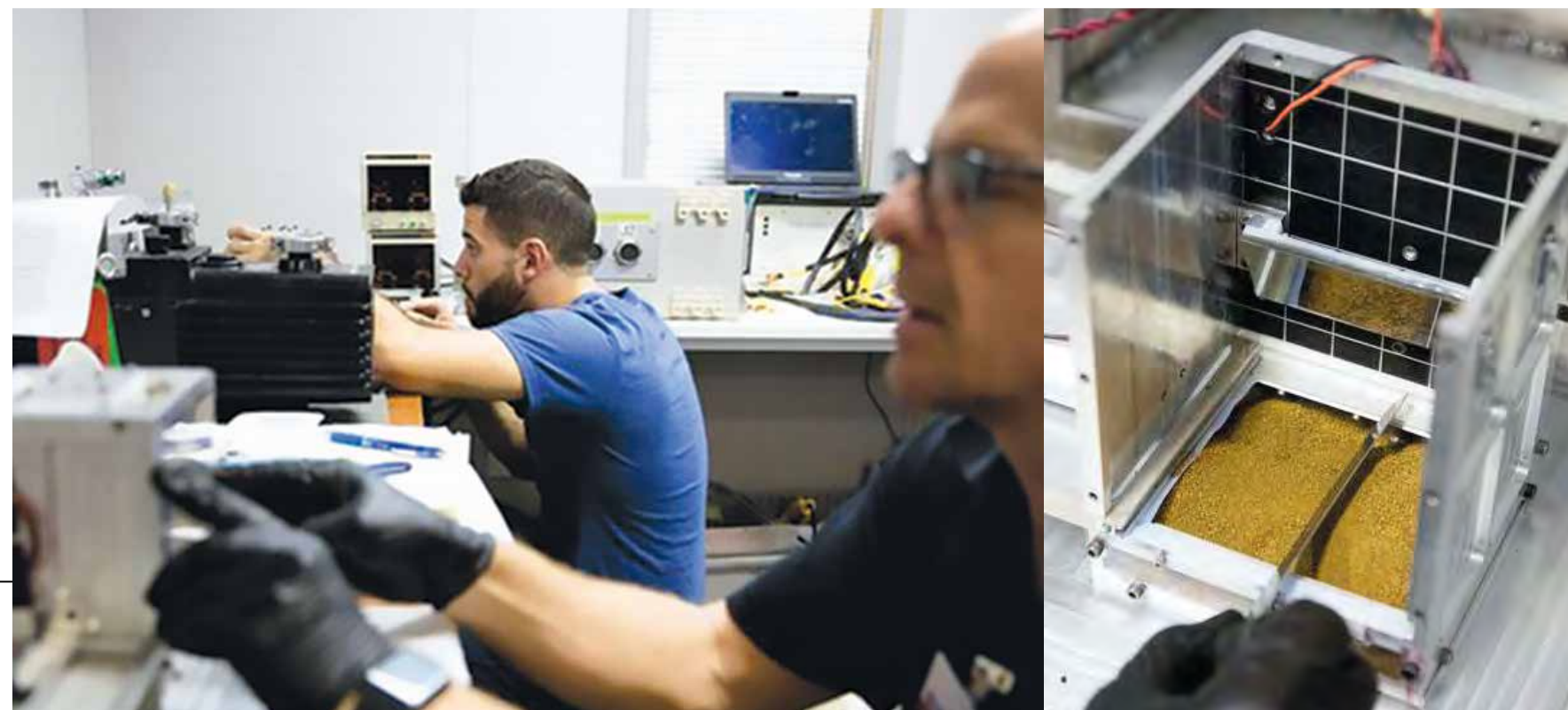
3rd

Test flight of this vehicle to space

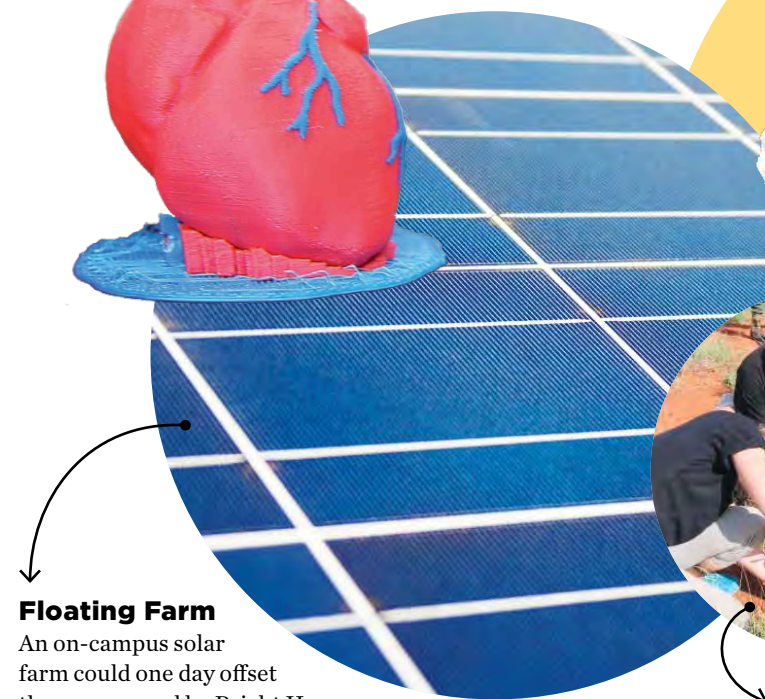
1st

Science payload on *New Shepard*

IMAGES COURTESY OF BLUE ORIGIN



Heart to Heart
3-D printed hearts are a great tool for pediatric surgeons.
bit.ly/ucf-heart-to-heart



Floating Farm
An on-campus solar farm could one day offset the energy used by Bright House Networks Stadium.
bit.ly/ucf-floating-solar-farm



The Buzz on Elephants
How bees are keeping elephants safe in Kenya.
bit.ly/ucf-the-buzz-on-elephants



Suit Up
UCF football is getting faster — and more fashionable.
bit.ly/ucf-suit-up

Drumroll, Please
Jeffrey Moore has been named dean of the College of Arts and Humanities.
bit.ly/ucf-drumroll-please



WHAT'S TRENDING ON...

UCF TODAY

Squirm to Learn
Letting kids with ADHD squirm helps them learn.
bit.ly/ucf-squirm-to-learn

New Threads
Our clothes may eventually monitor our health, sense the environment and harvest energy.
bit.ly/ucf-new-threads

We Are Family
After a fire destroyed a family home, fellow Knights stepped in to help.
bit.ly/ucf-no-harm



DOWNLOAD
the digital edition of *Pegasus* at bit.ly/ucf-pegasus.

TWITTER

April 29 • @UCF 400KG is how much water is needed for 4 astronauts for 30 days in space. #NASASocial

May 4 • @TinainTheSun You know you're graduating from @UCF when...



May 5 • @UCF_Knightro Don't worry, Knight fans. I'm not having any uniform changes. Just the same, suave Knight you all love.

May 14 • @UCFDannyWhite Couldn't be more proud of @UCF_Rowing for winning the @American_Conf Championship today! Awesome accomplishment - Go Knights! Charge On!

FACEBOOK

University of Central Florida
May 4, 2016

"Your education is a dress rehearsal for a life that is yours to lead." - Nora Ephron (Photo by Aung Tun '16)



3.1K likes 36 comments

Arthur Haas For the 1973 Graduation, the fountain was drained and that is where the graduates sat. President Nixon gave the commencement address.
May 4, 2016

Lucdwin Luck Aung Tun, that's my boi!!! Xi Class!
May 5, 2016

UNIFORM IMAGE COURTESY OF UCF ATHLETICS COMMUNICATIONS

Heavy Metal

Meteorites give physics students a rock-solid connection to cosmic theories.

BY ERIC MICHAEL '96

In the study of physics, some of the best lessons fall from the sky. To help his students better comprehend the composition of asteroids, planets and other celestial bodies, Professor Daniel Britt began building a collection of meteorites in 2003 with the help of Guy Consolmagno, curator of the Vatican's meteorite collection.

"Meteorites tell us about the mineralogy of asteroids — how they're put together, how strong they are and how they'll react to shock," says Britt, who has worked for NASA on Mars missions, including *Pathfinder*, the *Spirit* rover and the *Phoenix* lander, and was named to Pluto's New Horizons mission team.

The current collection of 15 meteorites, which all date from the formation of the solar system 4.6 billion years ago, come primarily from northern Africa and China, and represent a diversity of ancient cosmic materials that are valuable for study.

"When you 'see' the oldest thing in the solar system, it's more concrete, more tactile," Britt says. "There are lots of things we don't understand yet, but that's what science is about."



Here's what Britt teaches his students about meteorites:

1 PALLASITE Intense radiation liquefies the internal materials of some asteroids and reorganizes them based on density. This cross section of a pallasite shows what Britt describes as "a framework of metal surrounding a bunch of olivine crystals." As a result of impact, "What you're looking at is the boundary between the core and the mantle [of an asteroid]."

2 FUSION CRUST As a meteorite hurtles through space and slams into the Earth's atmosphere, friction strips away approximately 90 percent of its mass. "The rock literally boils off," Britt explains, leaving a millimeter-thick "layer of glassy melted stuff." He says, "That's one of the ways you can identify a meteorite — if it has fusion crust."

3 CHONDRITE Constructed of many different types of materials drawn together by gravity, these are some of the most common meteorites found on Earth. "Ordinary chondrites are kind of the sand of the solar system," Britt says. "It's basically what all the planets are made of, the stuff that's the original material of the solar system."

4 GIBEON Discovered in Namibia in 1836, the Gibeon iron meteorite field is one of the largest on Earth. Iron meteorites are thought to be the remnants of asteroids that had cosmic impacts that stripped off the crust and mantle. "The fact that you've got a piece of the core in your hand means that the asteroid no longer exists," Britt explains.

5 HOWARDITE Essentially a piece of the melted external crust of an asteroid, howardite is composed of fragments of lighter rocks fused together. According to Britt, this example, found in the Sahara Desert, is likely from the asteroid Vesta, which is one of the largest objects in the asteroid belt between Mars and Jupiter.

MAY 5-7

Nearly 8,000 students graduated during the Spring 2016 commencement ceremonies, bringing the total number of degrees awarded to 294,345 since classes started in 1968.

APRIL 15

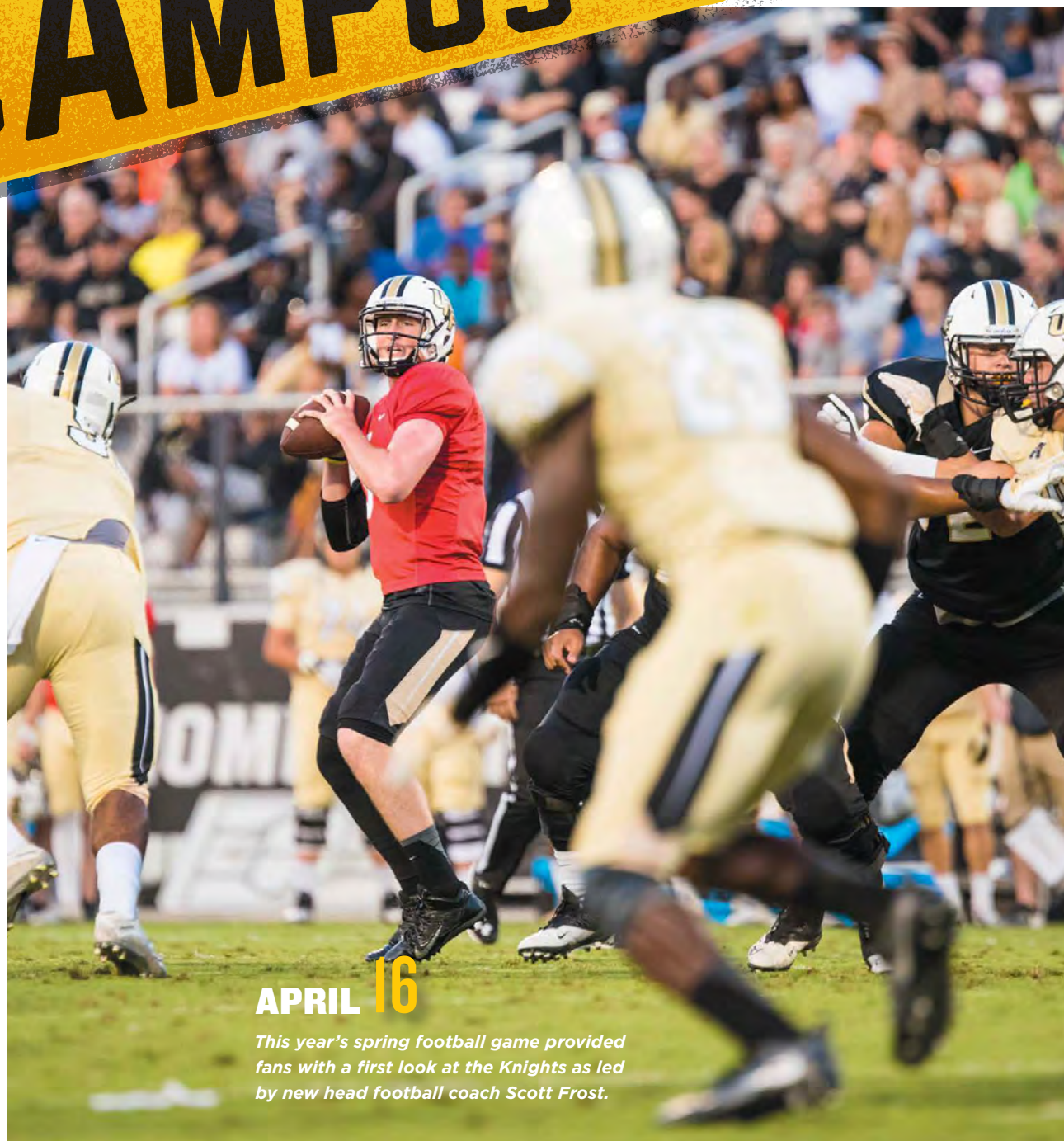
Electrical engineering student Joe Sleppy's Capacitech Energy won the UCF Joust New Venture Competition for developing technology that reduces battery size.

On CAMPUS



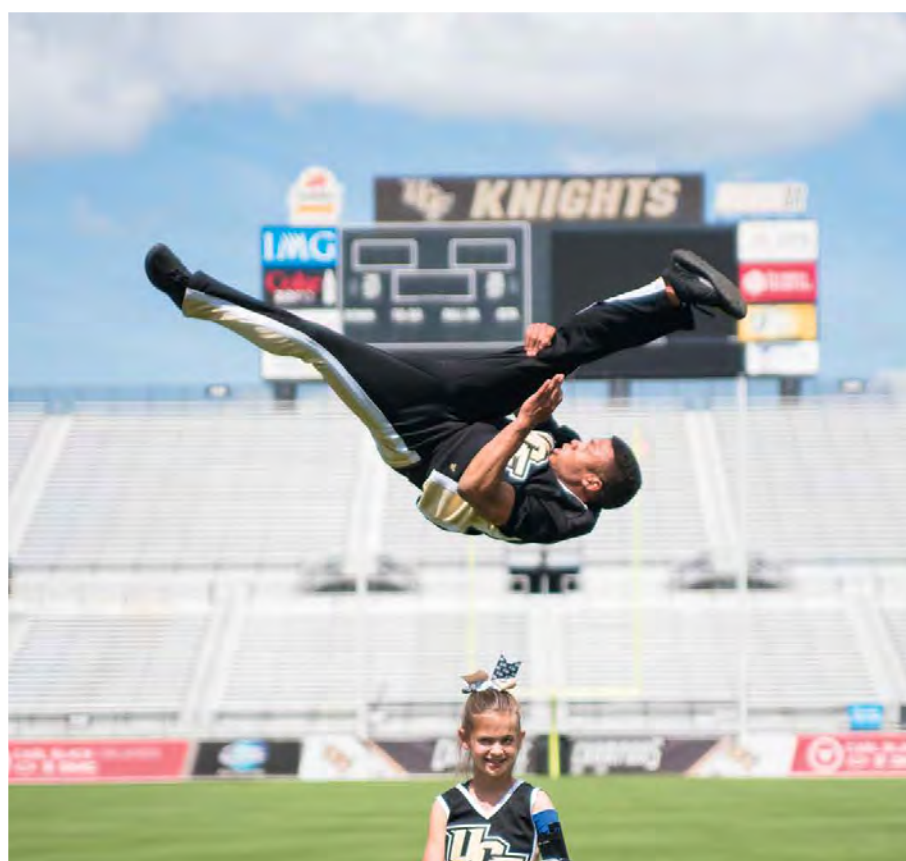
MARCH 15

Bill Nye the Science Guy spoke on campus about scientific discovery and environmental sustainability, encouraging students to change the world.



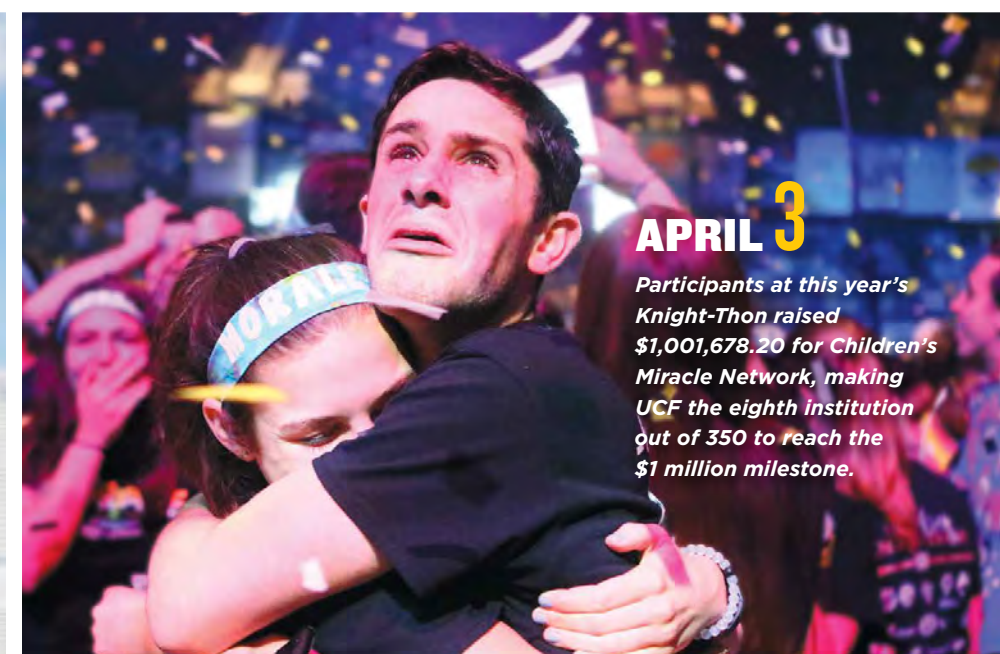
APRIL 16

This year's spring football game provided fans with a first look at the Knights as led by new head football coach Scott Frost.



MARCH 16

Ten-year-old Julianna Linton practiced with the cheerleading team, which presented her with a new 3-D printed bionic arm from Limbitless Solutions.



APRIL 3

Participants at this year's Knight-Thon raised \$1,001,678.20 for Children's Miracle Network, making UCF the eighth institution out of 350 to reach the \$1 million milestone.



APRIL 21

The UCF community gathered around the Reflecting Pond for Symphony Under the Stars, a UCF tradition for more than 25 years.



APRIL 27

Sophomore Spencer Shack caught some air between classes.

Briefs

SHINING STARS

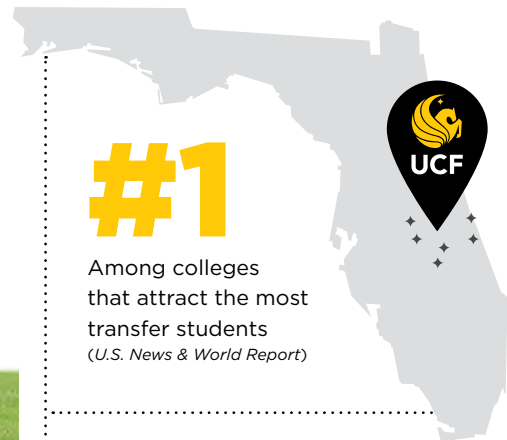
#1

For student-athlete graduation success rate among public universities in the nation



#1

Among colleges that attract the most transfer students (U.S. News & World Report)



#2

For number of National Merit Scholars in Florida

#1

Graduate game design program in the nation Florida Interactive Entertainment Academy (The Princeton Review and PC Gamer magazine)



#5

Hospitality and hotel management school in the world Rosen College of Hospitality Management (CEOWorld Magazine)

#9

Counselor education program in the nation College of Education & Human Performance (U.S. News & World Report)

#2

Cheerleading team in the nation for the third year in a row

#17

Nonprofit management graduate program in the nation College of Health & Public Affairs (U.S. News & World Report)

#20

Online bachelor's program in the nation (U.S. News & World Report)

#1

Collegiate Cyber Defense Club in the nation for the third year in a row



#13

Most Innovative university in the nation (U.S. News & World Report)



#14

Atomic, molecular and optical sciences graduate program in the nation College of Optics & Photonics (U.S. News & World Report)

#1

Higher education performance in the state of Florida (Florida Board of Governors)



NEW LEADERS



JOHNNY DAWKINS
MEN'S HEAD BASKETBALL COACH

Dawkins comes to UCF after an eight-year stint at Stanford University that included five postseason appearances.



KATIE ABRAHAMSON-HENDERSON
WOMEN'S HEAD BASKETBALL COACH

Abrahamson-Henderson led the University at Albany-SUNY to six winning seasons as head coach, including their first NCAA Tournament victory.



JOHN RODDICK
DIRECTOR OF TENNIS

Roddick joins UCF Athletics after seven seasons as the men's head tennis coach at the University of Oklahoma, which included three consecutive national runner-up finishes.



ELIZABETH KLUNOFF
VICE PRESIDENT FOR RESEARCH AND DEAN OF THE COLLEGE OF GRADUATE STUDIES

Klunoff was previously co-director of the joint doctoral program in clinical psychology at San Diego State University and the University of California, San Diego. She has received more than \$23 million in state and federal funding for her research into tobacco control and psychosocial issues related to cancer.

3,000,000,000

miles from Earth to the orbit of Pluto, which is in the Kuiper Belt

UCF Professor Daniel Britt was named to NASA's New Horizons mission team, which made history last year when it flew near Pluto. He joins the team as they begin the next leg of their momentous journey exploring the Kuiper Belt, a region of the solar system that extends billions of miles beyond Neptune.



"This is a great opportunity. It demonstrates that UCF is the place to go for expertise in asteroid and comet geology."

— Professor Daniel Britt, New Horizons mission team

IMAGES COURTESY OF NASA



SPACING OUT

NASA awarded UCF researchers Stephen Fiore and Shawn Burke \$900,000 to study the effects of long space missions on astronauts, including issues such as memory and attention span. The grant is part of a larger study, being conducted at institutions across the country, to learn more about space travel's impact on the human body.



FUELING DISCOVERY

Leigh Nash '14 was one of 10 graduate students in the U.S. to be awarded a highly competitive NASA two-year fellowship where she will work on new methods to test jet fuels. In addition to conducting her research at UCF, the Advanced STEM Training and Research Fellowship will partner Nash, a mechanical engineering graduate student, with a NASA researcher during a two-month summer program at NASA's Glenn Research Center in Cleveland.



HEAVENLY VIEW

Leos Pohl, a planetary science doctoral student, was one of only 25 people worldwide selected to study at the Vatican Observatory this summer. He joined students from more than 20 nations to examine the role of water in the solar system.



DESTINATION

DOWNTOWN

At UCF's new downtown Orlando campus, thousands of students will tap into the heart of the City Beautiful.

BY ERIC MICHAEL '96

Big things are happening in downtown Orlando. The city center is home to a burgeoning tech industry, global business enterprise, the Orange County legal community, a vibrant arts scene and a growing group of entrepreneurs. And with the opening of UCF Downtown in 2018, it will be the home to thousands of students taking advantage of unprecedented access to industry experts, internship and education opportunities, cultural stimulation and the energy of a thriving urban environment.

Design Priorities

1 Building a Destination
UCF Downtown will be a destination for students, visitors and the residents of downtown Orlando and will feature a central plaza and pavilion for events and gatherings.

2 Opening Gateways
The new campus will engage three distinct communities: downtown Orlando, the Creative Village and the Parramore Heritage Community. These borders will become distinct pedestrian gateways linking the current urban fabric into UCF Downtown and creating a borderless campus.

3 Celebrating the Urban Environment
UCF Downtown will create a unique environment that is simultaneously in the city and of the city — one that is designed with walkability and accessibility in mind.

4 Maximizing Space
The urban campus will layer public spaces vertically to maximize the outdoor spaces available on the compact site and add to the dynamic landscape.

Campus Life

Located at the intersection of Livingston Street and Terry Avenue, the campus center and public urban plaza will include housing, a one-stop shop for student services, a café and study spaces.

Academic Programs

The academic environment of UCF Downtown puts education on display. By breaking traditional barriers, selected programs will combine the innovation and rigor of a UCF education with the opportunities and accessibility of downtown Orlando.

Digital Entertainment and Communication

- Communication (M.A.)
- Corporate Communication (Certificate)
- Digital Media (B.A., M.A.)
- Emerging Media: Character Animation Track (B.F.A.)
- Human Communication (B.A.)
- Interactive Entertainment (M.S.)

Health Care Technology and Administration

- Health Care Informatics (M.S.)
- Health Informatics and Information Management (B.S.)
- Health Sciences (M.S.)
- Health Services Administration (B.S.)

Public Service and Other Programs

- Legal Studies (B.A., B.S.)
- Military Social Work (Certificate)
- Social Work (B.S.W., M.S.W.)

“Twenty-four years ago, I became UCF’s president. In all the years since, few moments have been as important as today. Today, we can plant a seed in downtown Orlando that will benefit our students, community and state for decades to come.”

— UCF President John C. Hitt to the Board of Governors on March 2, 2016



Leading the Charge

UCF has named Thad Seymour Jr. the vice provost for UCF Downtown.

Seymour, who previously led strategic planning and business development for Lake Nona Medical City and recently served as the senior advisor for UCF’s strategic planning process, will manage the project.



ILLUSTRATION BY KONSTANTIN DATZ

Numbers

7,700
Total students (5,400 UCF, 2,300 Valencia College)

1,800
Degrees awarded annually

14
Academic programs

1,000+
Internships available each year at downtown Orlando-based government agencies

100+
Local businesses that have pledged support to UCF Downtown

Partners

- | | |
|--|---|
| \$3M Dr. Phillips Charities | \$1M BB&T Corporation |
| \$3M Orange County Government | \$500K Alan Ginsburg |
| \$2M Valencia College | \$300K Orlando City Soccer Club |
| \$1.5M Orlando Magic | \$250K CNL Financial Group |
| \$1.5M CFE Federal Credit Union | \$250K Universal Orlando Foundation and Universal Orlando Resort |
| \$1.5M Florida Hospital | \$100K Dr. Bruce Douglas |
| \$1M UCF Leadership and Boards | \$100K Coca-Cola |
| \$1M Creative Village Development | |

ONE SMALL STEP FOR MAN, ONE GIANT LEAP FOR UCF

UCF has been committed to space exploration since before man's first step on the moon.

BY ANGIE LEWIS '03

Ever notice how the street names on campus represent constellations, galaxies and spacecraft? Gemini Boulevard, Andromeda Loop and Apollo Circle aren't just happy coincidences. They reflect UCF's beginnings as a "space university."

And they're not the only UCF connection that's out of this world. In 1968, our first president, Charles Millican, established the motto "Reach for the Stars" to represent the university's promising aerospace education in engineering, electronics and other technological professions. The theme continued with his presentation of the university's seal, Pegasus, which was intended to "bridge the gap between the humanities and space technology."

It was the height of space exploration in America, so given the university's proximity to Kennedy Space Center (KSC), it meant our then-little campus would be a big part of educating future generations of NASA engineers, administrators and even astronauts. And our connections to space have continued to grow over the past 53 years.

1968

MODEL MASCOT

FTU's first suggested mascot paired Florida's citrus and space industries with the introduction of the Citronaut — a character with an astronaut's head and an orange for a body — which made his debut on the cover of the 1968-69 *Student Handbook*.

1968 NASA GRANT
\$12.5K
2013 NASA GRANT
\$55M
TOTAL SPACE GRANTS
\$124M

1968

GALACTIC GRANTS

In 1968, UCF received its first research grant — \$12,500 from NASA. Nearly 45 years later, NASA helped UCF make history again by awarding the single largest grant in the university's history, \$55 million, to fund the GOLD mission. The GOLD mission will build and launch an instrument that will provide unprecedented imaging of Earth's upper atmosphere, also making UCF the first Florida university to lead a satellite mission for NASA. To date, UCF has received more than \$124 million in space-related research grants.



CITRONAUT

1981

PICTURE PERFECT

On April 12, 1981, UCF students watched from campus as NASA's first space shuttle, *Columbia*, launched from KSC. Rocket launches can still be seen from the main campus.

1986

GRAVITATIONAL GAUGE

Florida's first disc to measure Earth's gravitational field was installed at UCF in 1986.

1990

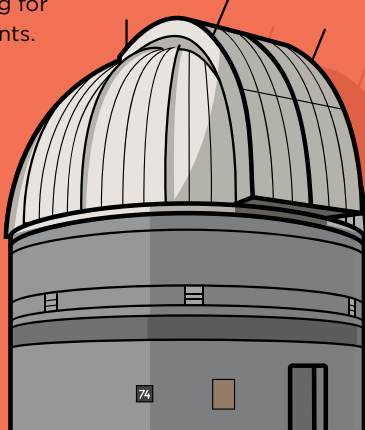
SAVVY SCIENTISTS

The Florida Space Institute (FSI) is based at UCF. Founded in 1990 as the Space Education and Research Center, FSI conducts research that ranges from studying the Earth's upper atmosphere and the origin of planets to the workings of asteroids and propulsion technologies for high-Mach aerospace vehicles. *(To read more about UCF's space research, turn to page 24.)*

1996

STAR SEARCHING

The Robinson Observatory was dedicated on UCF's main campus in 1996 and provides hands-on learning for astronomy students. *(See page 6.)*



ROBINSON OBSERVATORY

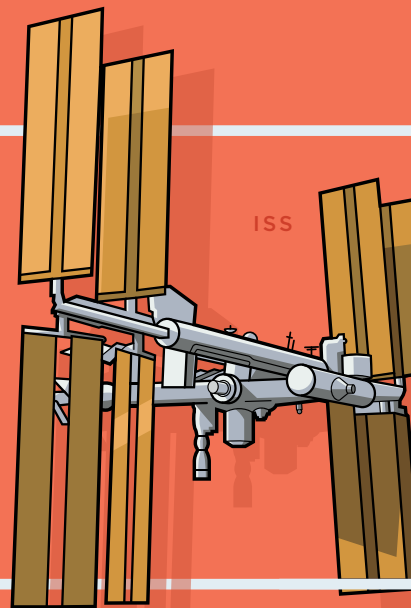
2014

SPACE STAMINA

In November 2014, a team of UCF engineering students debuted a method to administer IVs in space, which will be important when astronauts begin long-range space missions.

POWERFUL PARTNERSHIPS

UCF partners with a range of agencies and companies to conduct research, including NASA, SpaceX and Blue Origin. In addition to conducting research in the stratosphere and beyond, UCF has partnered with NASA to offer a joint master's training program for industrial engineering, where UCF instructors teach courses at KSC.



ISS

2009

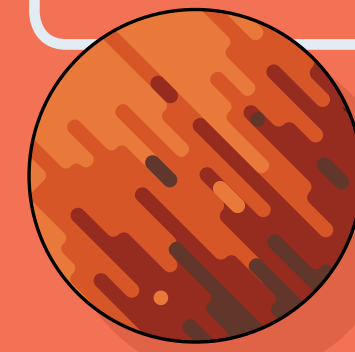
ALUMNI ASTRONAUTS

UCF boasts two astronauts: **Fernando "Frank" Caldeiro '95** and **Nicole Stott '92**. On August 28, 2009, as a mission specialist on space shuttle *Discovery*, Stott became the first UCF grad to blast off into space and the first UCF grad to live on the International Space Station. She flew again on February 24, 2011, on the final mission of *Discovery*. *(To read more about Stott, turn to page 34.)*

2015

ENGINEERING EDUCATION

A 2015 *Aviation Week* workforce study named UCF the No. 1 supplier of engineers to aerospace and defense industries.

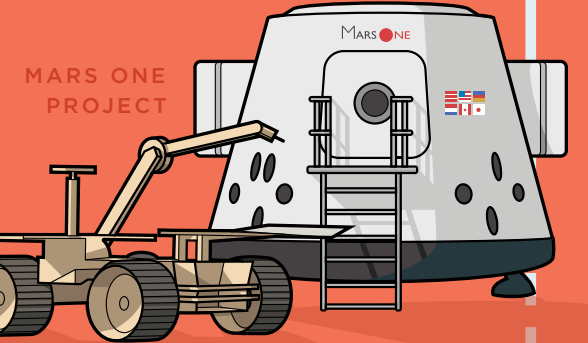


UCF-1.01

2012

EXTRAORDINARY EXOPLANET

UCF had a planet named after it. In 2012, UCF researchers discovered an exoplanet candidate they named UCF-1.01, which is only two-thirds the size of Earth and 33 light-years away, with surface temperatures of more than 1,000 F.

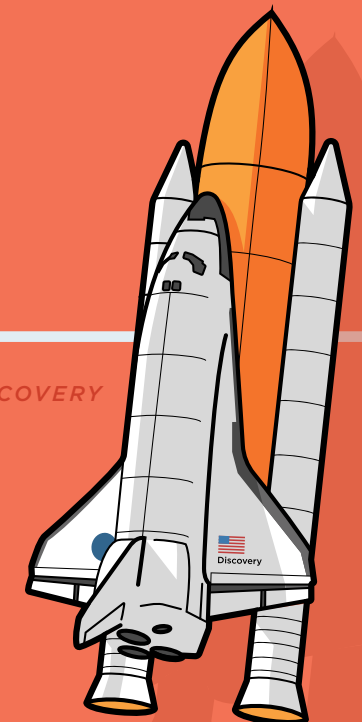


MARS ONE PROJECT

2026

MISSION: MARS

Two Knights are standing by as finalists for a one-way flight to Mars as part of the Mars One project to colonize the planet. Crews are scheduled to begin departing in 2026.



DISCOVERY

ASTRONOMICAL ARCHIVES

UCF Libraries hold 8,400 print publications from NASA as well as 28,000 NASA publications on microfiche. Special Collections and University Archives has 42 boxes and 33 volumes of NASA photos, spacecraft models, reports, manuals and memorabilia.

NASA PRINT PUBLICATIONS

8,400

NASA MICROFICHE PUBLICATIONS

28,000

BOXES IN THE SPACE COLLECTIONS

42

EXPERT EXPLORERS

As home to NASA's Center for Lunar and Asteroid Surface Science, UCF is a leader in the area of solar system exploration, providing critical research in areas key to future robotic and human space exploration missions. *(To read more about UCF's space research, turn to page 24.)*

IT'S ALL GEEK TO ME

John Joseph Adams '00 is discovering the next generation of sci-fi authors.

BY ANGIE LEWIS '03

John Joseph Adams '00 is a self-proclaimed geek, but even he never imagined that his name would one day be synonymous with science fiction.

Adams, who majored in creative writing at UCF, is the series editor of *Best American Science Fiction and Fantasy*; the editor and publisher of digital magazines *Nightmare* and Hugo Award-winning *Lightspeed*; the editor of many anthologies, including *Wastelands*, *The Living Dead* and *The Apocalypse Triptych*; and the producer of *Wired*'s "Geek's Guide to the Galaxy" podcast. Last year, he served as a judge for the young adult category of the National Book Awards, and received an Alfie Award for best editor of short form from the king of sci-fi himself, George R.R. Martin.

He also recently partnered with Houghton Mifflin Harcourt to launch their new science fiction and fantasy imprint, named, fittingly enough, John Joseph Adams Books.

Q & A

What draws you to science fiction?

The sense of wonder. Trying to imagine what the world would be like if certain things were different just seems inherently interesting to me.

What do you love most about your job?

Discovering a brand new writer. It's always wonderful when you publish something, and it really resonates with people. The other thing [I love] is being a curator for others. If you want to read a book of post-apocalyptic fiction, for example, you probably don't want to have to read 1,000 stories to find the best one. That's what I do. I read everything on that topic I can, then distill it down to the best 20 or so stories, so you don't have to.

How did your podcast with *Wired* come about?

David [Barr Kirtley, the host] and I lived in the same area near New York. We always got into these deep, involved discussions with our friends about science fiction and fantasy. We were also really big fans of documentaries. There was one about competitive Scrabble players, and I thought it'd be great if somebody did a science fiction and fantasy [documentary] that really delved into what it's like to be a fan. Dave said maybe we could do a podcast [instead].

What's a deal breaker for you, as far as writing is concerned?

The most frequent mistake I see is that the writer doesn't have a strong voice. You can tell a story with simple prose, but you have to have a voice. It's a hard thing to teach, and it's hard to point out to writers all the ways that a voice fails.

What's the state of science fiction today?

I like to say that we're in the golden age of science fiction because there's more wonderful material being written right now than ever. Science fiction and fantasy is largely an American-grown genre, but there are multiple anthologies over the last several years that are specifically geared toward promoting international science fiction and fantasy. It's interesting to see these perspectives from all over the world. It's also becoming more inclusive of racial and gender issues.

If someone wrote a book about you, what would the title be?

Why Did I Eat So Much Pizza: The John Joseph Adams Story

What would you bring with you on a one-way trip to Mars?

My Kindle. I would definitely include *Mars* by Ben Bova — and *The Martian* by Andy Weir because it has some useful tips.

If you could witness any event — past, present or future — what would it be?

If I could see the press conference where we finally announce that we conquered climate change, and the world's not going to continue to overheat and kill us all, that would be cool.

Zombies, vampires or superheroes?

Vampires would be on the bottom of my list. I really love zombies, and I really love superheroes, but if I had to choose between the two, I'd pick superheroes.

What's your greatest professional accomplishment?

My body of work as an editor. I think founding *Lightspeed* and building it to become one of the leading magazines in the field is my biggest publishing accomplishment. Having just recently launched *Best American Science Fiction and Fantasy* is something I'm also very proud of because it gives me an opportunity to be the evangelist-in-chief for bringing those genres to the masses.

What three things do you absolutely need while working?

Coffee, coffee and coffee.

Which fictional character would you most like to have coffee with?

Data from "Star Trek: The Next Generation." Bonus: I'd probably also get to drink his coffee since he'd have no use for it. Extra bonus: Hopefully this meeting would take place on the *Enterprise*, and I could meet some of the other crew as well.

5 RECENT SCI-FI NOVELS

THAT GET SPACE RIGHT

(With thanks to Andrew Liptak, weekend editor for io9/Gizmodo)

THE RED TRILOGY

Linda Nagata

Gets the mechanics for getting to orbit correct and portrays how space habitats might work, but more importantly, outlines the supporting economics.

AURORA

Kim Stanley Robinson

Imagines the challenges facing a generation ship as well as of living in space and ultimately, anywhere other than Earth.

ARKWRIGHT

Allen Steele

Features realistic space travel and how we have the technology to go to other planets now, with the only constraints being funding and organization.

REMEMBRANCE OF EARTH'S PAST TRILOGY

Liu Cixin

Features realistic treatment of astronomy, astrophysics, the search for extraterrestrial intelligence, and interstellar warfare within the constraints of slower-than-light space travel.

LIGHTLESS SERIES

C.A. Higgins

Though primarily about emergent artificial intelligence, the story takes place within a realistic solar system and sets up a society that is wholly believable in this environment.



PHOTOGRAPHY BY JEFFREY SAN JUAN

KNIGHTS IN SPACE

Since our beginnings in 1963 as one of America's first "space universities," UCF researchers have focused their attention beyond our Central Florida skies to investigate cosmic mysteries about nearly every planet in the solar system,* plus a few other celestial objects.

MERCURY MESSENGER

RESEARCHER: Todd Bradley, principal investigator for Planetary Mission Data Analysis Program grant
OBJECTIVE: To learn more about the thin exosphere of Mercury, the smallest and swiftest planet in our solar system. **STATUS:** In progress

EARTH'S MOON RESOURCE PROSPECTOR

RESEARCHER: Philip Metzger, cooperating Scientist
OBJECTIVE: To examine the soil on the moon's poles in order to excavate potential resources including hydrogen, oxygen and water. **STATUS:** Planning

SOLAR SYSTEM EXPLORATION RESEARCH VIRTUAL INSTITUTE

RESEARCHER: Adrienne Dove, co-investigator **OBJECTIVE:** To understand the dynamics of dust on and near the lunar surface to prepare for future manned and unmanned missions to the moon and asteroids. **STATUS:** In progress



TODD BRADLEY
Associate scientist at Florida
Space Institute (FSI)



DANIEL BRITT
Professor of planetary science



HUMBERTO CAMPINS
Pegasus Professor of
planetary science



JOSHUA COLWELL
Professor of planetary science
and assistant director of FSI



ADRIENNE DOVE
Assistant professor of
planetary science



RICHARD EASTES
Assistant scientist at FSI



YAN FERNANDEZ
Associate professor of
planetary science



JOSEPH HARRINGTON
Professor of planetary science



RAMON LUGO '79
Director of FSI



PHILIP METZGER
Associate in planetary science
research at FSI



ALAN STERN
Chief scientist at FSI



VENUS



MARS CURIOSITY

RESEARCHER: Daniel Britt **OBJECTIVE:** To develop and build radiometric calibration targets that enable scientists to "see" Mars colors as they would be on Earth. **STATUS:** In progress (used on every Mars rover)

ASTEROID OSIRIS-REX

RESEARCHERS: Humberto Campins, co-investigator, and Yan Fernandez, contributing scientist **OBJECTIVE:** To send a spacecraft to one of the oldest asteroids in the solar system, Bennu, and bring back samples to analyze. **STATUS:** Scheduled to launch September 2016

EARTH GOLD

RESEARCHER: Richard Eastes, principal investigator **OBJECTIVE:** To better understand solar wind's impact on the Earth's upper atmosphere. **STATUS:** Scheduled to launch in 2017



SATURN CASSINI

RESEARCHER: Joshua Colwell, co-investigator **OBJECTIVE:** To observe, analyze and interpret data from Saturn's rings using an ultraviolet imaging spectrograph. **STATUS:** In progress



JUPITER GALILEO

RESEARCHER: Ramon Lugo '79, NASA engineer **OBJECTIVE:** To measure the atmosphere of Jupiter, the largest planet in the solar system, and observe the planet and its moons from orbit. **STATUS:** Completed

URANUS & NEPTUNE VOYAGER 2

RESEARCHER: Joshua Colwell, science team member **OBJECTIVE:** To study the structure, origin and history of the rings of Uranus and Neptune. **STATUS:** Completed

URANUS



NEPTUNE

KUIPER BELT NEW HORIZONS

RESEARCHERS: Alan Stern, principal investigator, and Daniel Britt, science team member **OBJECTIVE:** To study the solar system's outskirts and discover how ice dwarf planets have evolved over time. **STATUS:** In progress

BEYOND OUR SOLAR SYSTEM



UPSILON ANDROMEDAE B

SPITZER EXOPLANET TARGETS OF OPPORTUNITY PROGRAM

RESEARCHER: Joseph Harrington, principal investigator **OBJECTIVE:** To measure the chemistry and temperature of the atmosphere of exoplanets, which are planets that orbit stars other than the sun. **STATUS:** In progress

THE RESEARCHERS

*Solar system not to scale.



ILLUSTRATION BY ELIJAH MCNEAL

SPACE TOURISM

The Next Big Adventure

Space tourism has come a long way since 1967 when Barron Hilton, then president of Hilton Hotels, described his vision for a hotel on the moon. It was envisioned — complete with a Galaxy Lounge where visitors could enjoy a martini while looking at the stars — as a luxury for the wealthy elite.

Today, Sir Richard Branson's Virgin Galactic aims to be the world's first commercial "spaceline," offering a 2.5-hour flight with six minutes of weightlessness and some incredible views. It even has more than 700 confirmed customers patiently waiting for flights. Additionally, Blue Origin, led by Amazon founder Jeff Bezos, aims to provide space tourism as well. While space tourism remains largely a status

symbol for the super rich, this trend is not unusual in the history of tourism. And there's reason to believe that eventually this particular brand of adventure, boost the economy and make people more aware of the vulnerability of our planet.

That's because tourists have always pushed boundaries, seeking new places and experiences. You see this playing out in how people are choosing to travel. According to *Leisure and Aging*, "Adventure tourism is one of the fastest-growing segments of the tourism market. It has become so popular that approximately 100 million adults have chosen vacations that are classified as soft adventure." Space tourism is a logical next step for this growing trend.

In addition to adding another outlet for thrill seekers, space tourism offers a new way to boost the world's economy. According to a report conducted by the World

Travel & Tourism Council, tourism generated \$7.2 trillion (9.8 percent of the global gross domestic product) and provided 284 million jobs — for a total of one out of every 11 jobs on the planet in 2015. There's every reason to believe that commercial space travel will have a similar impact on the economy.

As space adventure will boost the economy, it likewise will increase our appreciation of how rare and valuable our own planet is. The experience of traveling out of Earth's atmosphere and looking back on the world we inhabit produces a sense of awe and respect. Space travelers will gain a deeper appreciation for our planet and hopefully want to take a more active approach to protecting it when they return to terra firma.

While risks remain, it is fair to assume that space tourism has further to travel before it becomes the affordable domain of the middle class. But once it does, I am ready for the stellar adventure.

ALAN FYALL | Orange County Professor of Tourism Marketing, Rosen College of Hospitality Management

The Next Big Disaster

As innovative, exciting and lucrative as it may sound, commercial space travel by civilians is a dangerous endeavor, not only for humans but also for our planet.

In November, Congress voted to approve the U.S. Commercial Space Launch Competitiveness Act, which limits regulatory oversight, at least for eight more years, temporarily putting the responsibility on passengers instead of companies. For innovation and exploration, this lack of regulation is great news; for humans wanting to travel to space, it's less so. In just the past two years the industry has experienced three catastrophic failures — two rockets exploding and one test flight crashing, resulting in the death of a pilot.

One could argue that space tourists travel at their own risk, but even that's not entirely true. The impact

of space travel on our planet puts all humans — not to mention plants and animals — at risk. Entrepreneurs investing in space travel, such as Richard Branson of Virgin Galactic, argue that space travel would reveal a smaller carbon footprint than normal air travel. But scientists worry about the soot or black carbon that results from rocket emissions. Soot accumulated in the stratosphere (approximately 5 to 31 miles above the Earth) cannot be washed away by rain or winds, as it is in the lower atmosphere. As a result, black carbon may linger in the stratosphere for years, causing exponentially more climate change. Some studies — estimating the potential soot accumulation based on assumed demand levels and simulations — reveal a grim picture, including massive sea ice loss, ozone layer depletion and temperature increases.

Even if these estimates are based on slightly dated technology, the current research in this area is far

from adequate to set healthy premises for sound industry development. In addition to the lack of biological and physical evidence on causes and effects, there is also a lack of legal precedent for addressing our carbon footprint in space. Environmental law professional Jon Krois warns that while the National Environmental Policy and Clean Air acts "partially address the licensing of commercial spaceflights by the Federal Aviation Administration, neither space law nor current environmental law respond sufficiently to the environmental threat posed by this industry."

As long as the space tourism industry is developed without the necessary cautions, it remains at risk of becoming the most anti-sustainable tourism sector, with pervasive negative impacts at the global scale. And I for one do not feel comfortable promoting the fancy of the few at the risk of our planet and all that call it home.

ASLI TASCI | Assistant Professor, Rosen College of Hospitality Management



WHERE TO NEXT?

BY PAT DUGGINS '84 AND LAURA J. COLE

With research expanding throughout our solar system and beyond, the human race is on the cusp of a new Space Age. We turned to UCF scientists to reveal what space exploration will look like in the future.

The final countdown of the space shuttle program began on July 8, 2011, when *Atlantis* blasted off from NASA's Kennedy Space Center (KSC). It came to an end 13 days later when the spacecraft glided down KSC's 15,000-foot runway and rolled to a stop.

For some, this final flight signaled the end of U.S. space exploration. But nothing could be further from the truth.

Since then, the *Curiosity* rover successfully landed on Mars. *Voyager 1* became the first man-made spacecraft to reach interstellar space. *New Horizons* flew past Pluto, sending back the first images of the dwarf planet. Commercial space flight companies Blue Origins and SpaceX successfully launched and landed rockets back on Earth, proving the viability of reusable rockets. And Scott Kelly broke the record for the longest consecutive time spent in space by a U.S. astronaut¹ — spending 340 days aboard the International Space Station — providing valuable information about the impact of extended space travel on the human body.

It's safe to say that space exploration is a more robust endeavor than ever before with both the private and public sectors working to find new, cheaper ways to explore our solar system and beyond. With all we're learning about the final frontier, scientists at UCF and elsewhere are looking ahead with anticipation. Their interest raises questions of who funds these exploratory endeavors, how we reach distant planets, who leads the charge and why cosmic curiosity is as worthwhile now as it was when NASA began more than 50 years ago.

Building Partnerships

Since the shuttering of the shuttle program, there has been media discussion about the privatization of space. While it's true that private companies will have a larger role in space exploration, NASA will continue to play an integral role. In fact, commercial companies and NASA have always worked together.

"There's a little bit of a misconception about that," says Joshua Colwell, professor of planetary science and assistant director of the Florida Space Institute (FSI). "Private industry has always been involved in everything NASA does. Huge parts of the space shuttle were built by private companies."

Officials at NASA agree. One example of this is the Apollo program. During the race to the moon in the '60s, commercial companies played a meaningful role in building the hardware that put Neil Armstrong on the lunar surface. Growing up, Dale Thomas, former associate director of NASA's Marshall Space Flight Center, remembers watching his father, an employee for General Electric, build the Apollo launch sequencer.

That experience piqued his interest in the space business, especially in terms of how public companies like NASA and private industries could better work together. He began exploring this more in the early 2000s with the Space Launch Initiative, a joint research and technology project between NASA and the Department of Defense that began with reusable vehicle study contracts, much like the rockets developed by SpaceX and Blue Origin.

ILLUSTRATIONS BY BRIAN BOESCH

¹ Russian cosmonaut Valery Polyakov holds the longest record with 437 consecutive days spent aboard the *Mir* space station.

Throughout the process, Thomas and his team at the Marshall Center provided guidance and discussed possible solutions for the problems SpaceX was encountering.

Of the partnerships, he says, “We never saw it as an either/or proposition. We saw it as good all along that private industry was trying to develop cheaper ways to get to orbit.”

According to Colwell, the major change going forward is “we’ll let SpaceX design a rocket, and NASA will purchase the services to take astronauts or materials to a space station instead of launching it on a rocket designed and owned by NASA.”

Ultimately, these types of partnerships reduce the overall costs associated with building, flying and maintaining space vehicles. But NASA will still shoulder the expense of reaching new heights in space.

Think of NASA’s partnership with commercial companies as being similar to the development of the transcontinental railroad in the 1800s, which provided a faster, cheaper way to travel from New York to California. Government agencies funded the initial infrastructure, clearing paths and laying track. And once the infrastructure was established, private industry was brought in to run, schedule and maintain the trains.

The same principle could apply in the future to low Earth orbit.

“We’ve created capabilities for commercial operators to do a lot of what needs to be done in low Earth orbit,” says Ramon Lugo, director of FSI, which is based at UCF. Lugo, a former director of NASA’s Glenn Research Center, continues, “I see that market being really the domain of commercial services while the government continues to push the frontier out.”

Lugo, Colwell and Thomas all agree this would be an ideal relationship. The government should pay for the resources and new technology to learn more about our solar system while private industry should find new ways to improve on how that’s being done.

This partnership extends beyond the U.S. as well. In order to reach new depths of the solar system, NASA and private industries will need to work with Europeans, Russians and the Japanese, much as we

have on the ISS. These collaborations have already begun with projects like NASA’s *Orion* spacecraft, which aims to carry astronauts farther into space than ever before and is scheduled to launch in 2017. To achieve this, NASA partnered with the European Space Agency, which provided the service module — the part of the spacecraft that carries fuel.

“In the long term, we’ll be working with all of the international partners, including the Chinese and Russians,” says Daniel Dumbacher, former deputy associate administrator for Exploration Systems Development at NASA Headquarters in Washington, D.C. “It’s going to evolve into a partnership because no one country can do this by themselves.”

Reducing Costs

If you think driving across the country takes a long time and gas prices are expensive, try flying to Mars. At its closest, it’s still 34.8 million miles from Earth and can take anywhere from about 150 to 330 days to reach. And even with the most efficient flight plan, it’s still an energy-intensive venture that requires several tons of propellant.

As for the actual cost, industry sources estimate between \$200 billion to \$400 billion for NASA to put humans in contact with Mars’ red, dusty soil — far exceeding their \$8 billion annual budget for human exploration. Even the modestly priced Mars One, the Netherlands-based nonprofit that wants to send people on a one-way trip to colonize the red planet, estimates \$6 billion to send the first four people. (Though experts are highly skeptical of that estimate.)

And that’s just getting to one of the closest planets in our solar system. To make such a trip possible, scientists are looking at ways to reduce the cost, including developing reusable rockets and identifying potential stopovers to reduce the amount of fuel used.

“A lot of the future of space exploration is reusability, and SpaceX is looking at that,” says Colwell. “The space shuttle was reusable, but because it was such a large and complex system ... it didn’t really bring the cost down the way they had originally imagined it would. SpaceX, on the other hand, is now regularly recovering their

[Professors are reviewing] a concept that will send a robotic spacecraft to a near-Earth asteroid, grab a multiton boulder from its surface, and relocate the chunk of space rock into orbit around the moon.

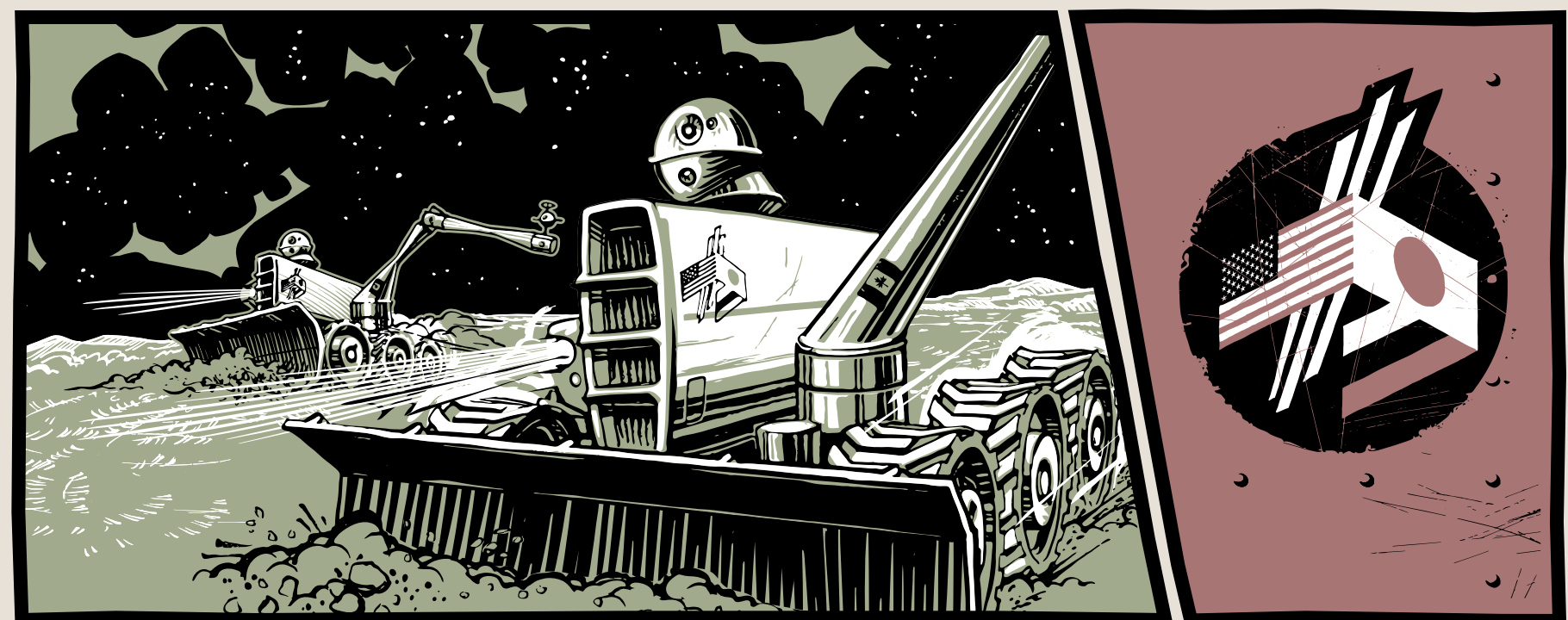
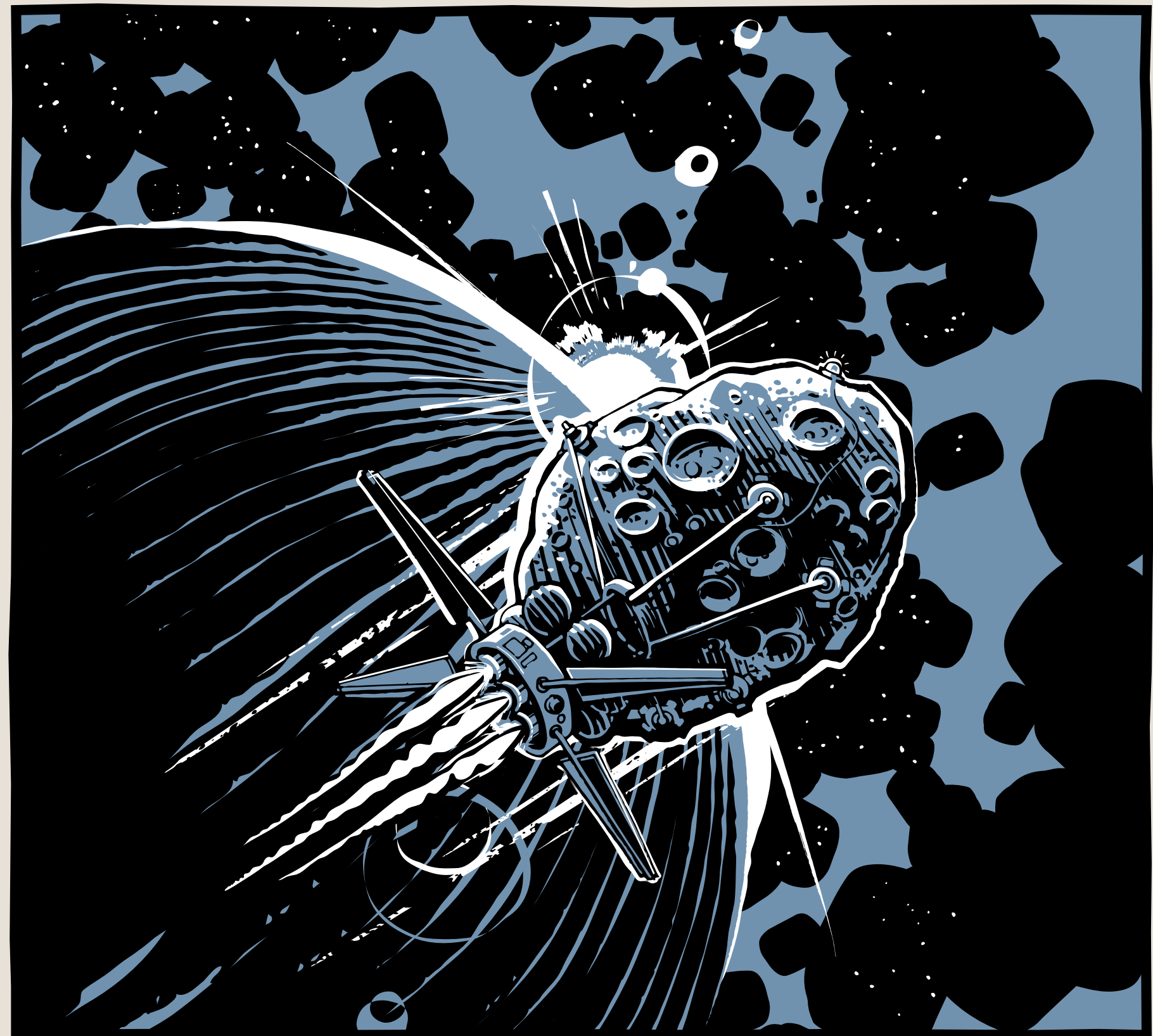
first-stage boosters, and they’ve announced plans to send a capsule to land on Mars in 2018 at a much lower cost than what it would have been with the old launch architectures.”

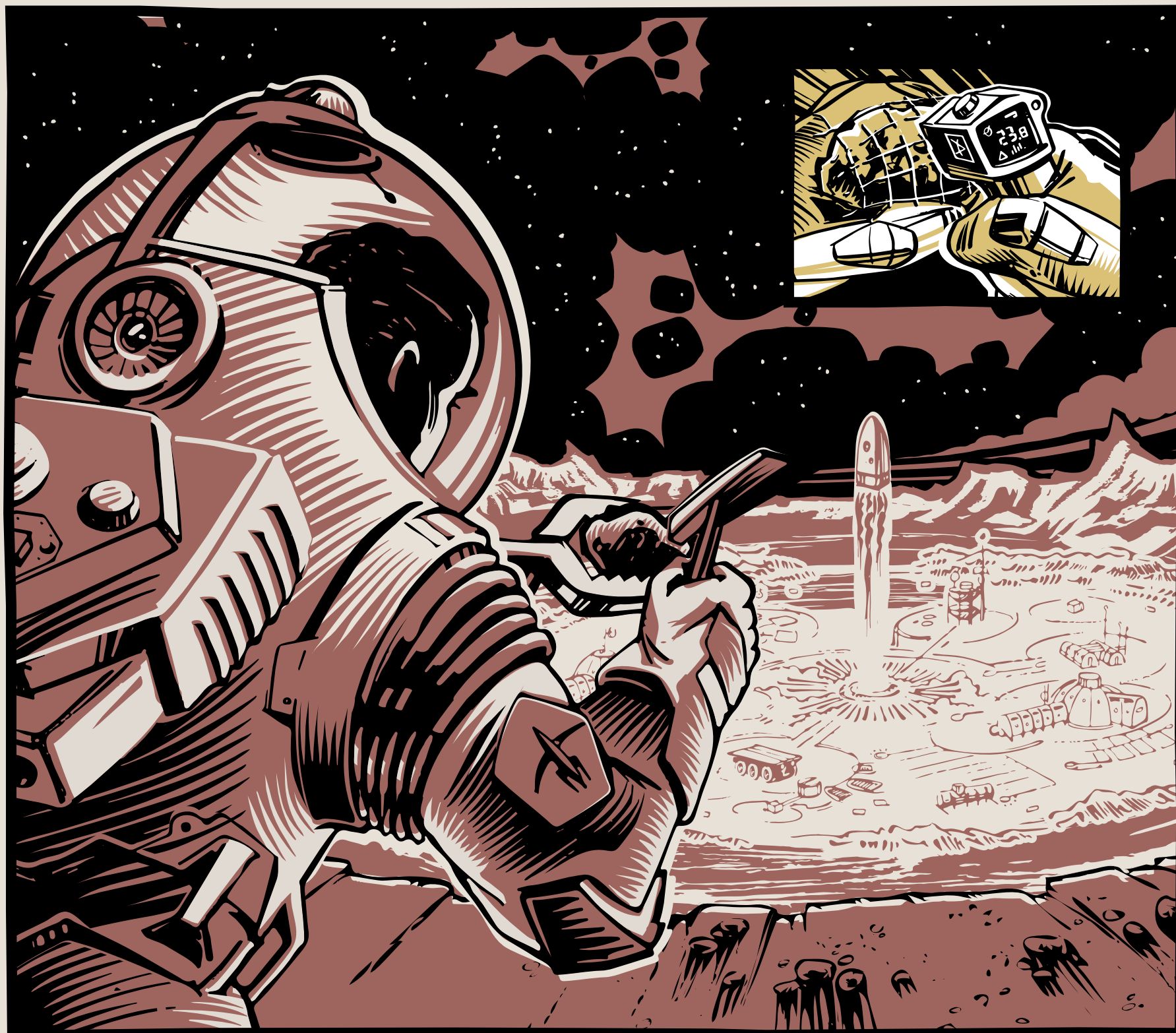
Another way to reduce costs is by finding creative solutions to reduce fuel use and minimize hazards. That’s where Pegasus Professor Humberto Campins, an asteroid expert, may play a big role. He and Professor Daniel Britt were selected to review a concept that will send a robotic spacecraft to a near-Earth asteroid, grab a multiton boulder from its surface, and relocate the chunk of space rock into orbit around the moon. The new technologies needed for this mission will allow scientists to study the asteroid closer to Earth and also help pave the way for a manned mission to Mars in the next 15 to 20 years.

Here’s how that might work. Instead of having astronauts fly directly to the surface of the red planet, which would involve a hazardous landing, NASA is thinking about a stopover on one of Mars’ two moons. Each of these orbiting satellites has less gravity to crash a spacecraft and no atmosphere to burn it up. Once on Phobos, the larger of Mars’ two moons, astronauts could scout a safe landing site on Mars and make the touchdown when they’re better prepared, also allowing them to conserve fuel.

“Phobos appears to have a similar composition as many types of carbonaceous asteroids, so learning how to use [an asteroid’s resources] is a first step before going to Phobos,” says Philip Metzger, a planetary scientist at FSI who specializes in technologies for mining asteroids, the Earth’s moon and Mars.

“Appropriately designed robots will not have the problems traveling the vast distances of the solar system that humans have, and they can set up the infrastructure that will enable us to follow.”





[Moon and Mars] bases would allow astronauts to use natural resources for much of what they need to live and work as well as pave the way for exploration of more distant destinations, like Jupiter's moons.

Within the next 50 years, scientists predict NASA will have well-established bases on both the moon and Mars. These bases would allow astronauts to use natural resources for much of what they need to live and work as well as pave the way for exploration of more distant destinations, like Jupiter's moons.

Using Robots

NASA is hoping to send astronauts to Mars in the 2030s, but there's still a long way to go before people will be permanently living there. One popular strategy of prepping other planets for humans involves using robots.

Metzger, who worked at NASA for more than 29 years, calls this bootstrapping the solar system. In 2013, he wrote a paper for the *Journal of Aerospace Engineering* about doing just that, garnering the immediate attention of the White House.

"Appropriately designed robots will not have the problems traveling the vast distances of the solar system that humans have, and they can set up the infrastructure that will enable us to follow," wrote Metzger. "Within the first several decades, a vital industry could be established on the moon and in the asteroid belt using technologies that are, for the most part, only modestly advanced beyond today's state of the art. After that, human outposts, laboratories and observatories can spring up everywhere between the Kuiper Belt and Mercury."

On Mars, Metzger envisions robots using soil and 3-D printers to create necessities, such as landing pads for safer arrivals and radiation shields around habitats to minimize astronauts' exposure to the harsh environment. Robots would also be used to construct buildings.

Metzger is currently working to make that last part possible. He will be the lead contact for UCF on a recently awarded project to develop the 3-D printing technology to create buildings on Mars, using the natural clays found on the red planet. By creating simulated Martian clay based on information they know from Mars rovers, Metzger and his team, in collaboration with Deep Space Industries, will show how using robots to construct buildings from available resources could be possible.

And while the game plan is to have robots precede humans to Mars, robots will also be vital to every part of the mission once astronauts do arrive, acting as guides, scouts and assistants. The word for this is co-robotics.

"Robots will be everywhere," Metzger says. "Let's say you're driving in a rover. You could send a drone ahead of you to scout where you're going. The drone takes pictures and sends them back. The astronauts, with help from Mission Control, make decisions about where to go next, so they don't drive off a cliff or so they can get to a more interesting geological site to find better samples."

Combining robotic and astronaut missions could potentially put to rest the age-old argument of whether to use manned or unmanned spacecraft to explore the cosmos.

Learning More

Whenever arguments begin over funding the U.S. space program, someone invariably asks, "Why don't we spend that money here on Earth?" Studies, however, show a \$7 to \$40 return for every dollar invested in space, with much of the technology and inventions made for space exploration having applications on Earth.

Assuming the space program's goals become more ambitious in the future, so will the problems that will need to be solved. Exploring these problems, however, produces several benefits. Take for example the issues of vision, bone and muscle loss found in astronauts after returning from space.

Dumbacher is familiar with this type of research. He previously ran NASA's Payload Operations Center, where it was his job to supervise science research aboard the ISS. This included studies on how weightlessness impacts the human body.

"Macular degeneration and muscle and bone loss seen after long space flights are very analogous to the natural aging process here on Earth," Dumbacher says. "Through longer time spent in space, we can learn more about the human body and how it works."

Astronaut Scott Kelly's 340-day flight aboard the ISS is a case study on the impact of long-duration space flight on the human body. After landing in Kazakhstan in March, Kelly reported having

burning skin, rashes and flu-like symptoms. Even three months after returning to Earth, he reported having sore feet, stiff legs and fatigue.

"But that's why we do this," he said during his first major address to NASA employees in May. "We need to learn these things if we're going to go to Mars."

While he was in space, his identical twin brother, Mark, a retired astronaut, took part in medical experiments here on Earth, so NASA could more accurately compare the effects of different environments on the brothers. Scientists continue to monitor the twins to learn more, in hopes of addressing issues like bone and muscle loss before sending humans on lengthy journeys into the void. And those solutions can translate to medical advances on Earth.

In addition to a better understanding of health issues, Lugo points to the potential for more efficient communication satellites, which could result in better satellite-related services here on Earth. New technology is needed for longer space missions, and one potential solution is an electrical ion engine that uses less fuel. That idea could lower the costs of orbiting satellites, and, in turn, the price of consumer services like cable and internet. Lugo contends that refuelable engines will make satellites last longer.

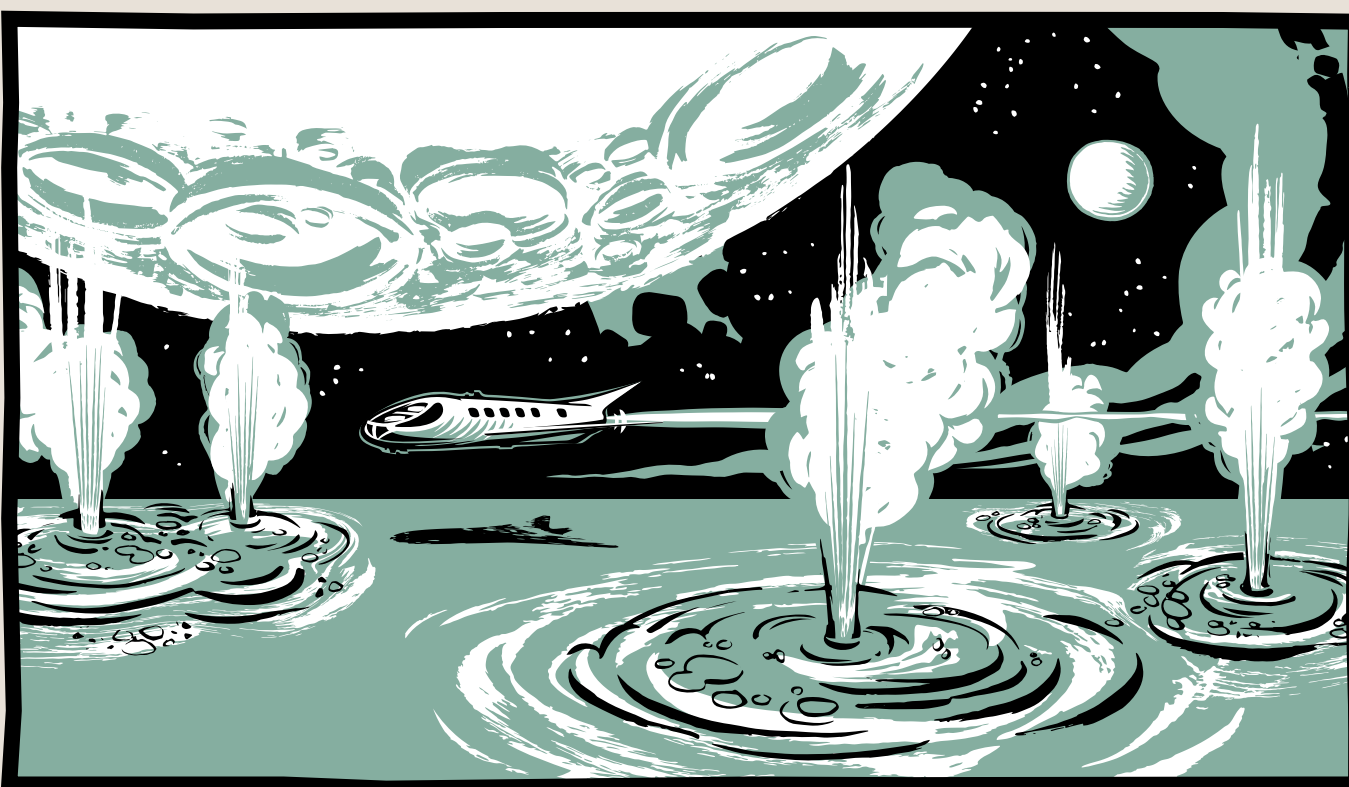
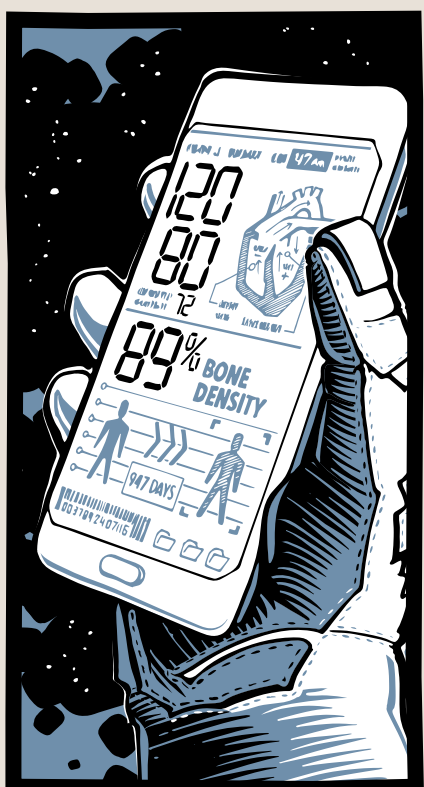
"A lot of times, a satellite is taken out of service, not because the satellite is no longer viable from an operations standpoint, but because we run out of gas," he says. "And instead of lasting 10 years, [a satellite with refuelable engines] might last 30 or 40 years." Lugo says those cost savings could be passed along to consumers.

Passing the Torch

For Colwell, the biggest benefit of space exploration — now and in the future — is empowering the next generation of space explorers to look to the stars and see endless possibilities.

"I think broader access to space is great for us as a university because it gives us more opportunities to get students involved in space projects. That's one of the things we really strive for," he says. "So much progress is being made in space, and students are in a position now where they can really create the future."

Pat Duggins '84 is news director for Alabama Public Radio and an international award-winning journalist. He has covered 103 space shuttle missions and written two books: Final Countdown: NASA and the End of the Space Shuttle Program and Trailblazing Mars: NASA's Next Giant Leap.





SUCH GREAT HEIGHTS

BY JEFFREY C. BILLMAN '01

“
THE WHOLE
SPACEFLIGHT
EXPERIENCE...
”

Her voice, which typically effuses confidence and energy but now sounds almost wistful, trails off, like she's searching for the right word. And then she lands on it: *"Surreal. I'm so thankful for the pictures and videos. They remind me I was really there."*

Nicole Stott '92 has been on this planet for a little over 19,000 days — and off it for 104, in two space shuttles and a three-month stay on the International Space Station. She's one of 533 people to enter Earth's orbit and the 52nd woman to do so — and the 10th woman to perform a spacewalk.

Stott doesn't dwell on her place in history. But the enormity of what she accomplished — the decades of preparation, the fearlessness of riding a rocket into the sky at more than 25,000 mph, and the six hours and 35 minutes spent in the vacuum of space, with only a bulky spacesuit and a thin white tether protecting her from the starlit abyss — stays with her.

But when she was in space, the surrealism wasn't as daunting; the focus was on the specific, nitty-gritty objectives of each particular mission: fix this thing, check on that thing, make sure this other thing is running properly. Stott, like most astronauts, can talk for hours about the technical minutia that goes into keeping a football-field-size station operating while hurtling through space at 17,500 mph.

In 2009, Nicole Stott '92 spent 91 days in space, which gave her a new perspective on life. Now she wants to share it with the world through art.

“
**YOU REALIZE YOU'RE
 NOT FROM FLORIDA
 OR THE UNITED
 STATES. YOU'RE
 AN EARTHLING.
 THE BOTTOM LINE
 IS WE ARE ALL
 EARTHLINGS.**
 ”

Down here, those things feel impossibly complex. Up there, it's the job you came to do — unglamorous but necessary. And so you focus on the task at hand. Then you come home and have time to reflect on what you've just experienced. "I'll tell you, a spacewalk, that's one of the times of my life where I felt the most alone and detached from any other human being," Stott says. "But at the same time, I also felt the closest and most connected to humanity."

She was alone in a literal sense, floating more than 200 miles above the Earth, far removed from life on terra firma. But from such great heights, you also see that indescribably beautiful blue marble, set against the blackest black, differently. The distinctions that drive so much conflict — race, class, religion and ideology — are no longer visible.

"You realize you're not from Florida or the United States. You're an earthling. The bottom line is we are all earthlings," Stott says.

So last year, when Stott retired from NASA after 27 years, she decided that conveying this sense of awe and wonder was her new mission. And she does this with a

brush and canvas, creating paintings that portray what it's like to live and work in space and offer a sense of our place in the grand scope of the cosmos.

"I want people to look at [the paintings] and maybe think differently about where we live," Stott says. "You can see Earth as your home, really looking at your home planet. People don't consider it that way all the time. People don't realize they're in space."

And if you think about it that way, she says, perhaps you'll take better care of it.

Stott's first-ever tweet was full of exclamation points. "On orbit! Feeling great! Launch was an incredible kick off the pad! Smiled the whole way! Got a 'woo hoo' in there for good measure!"

Her first flight, aboard *Discovery* STS-128 — STS-128, meaning the 128th space shuttle mission — blasted off from Kennedy Space Center at 11:59 p.m. on August 28, 2009. There were seven crew members; Stott was the only woman.

While the astronaut class of 2013 had as many men as women, Stott's class in 2000 had 14 males and only

three females; all three were classified as mission specialists, not pilots. This wasn't uncommon. As Amy Foster, a UCF associate professor of history who has studied women in space, points out, many of the pilots are drawn from the male-dominated Air Force. The women, on the other hand, tend to come up through the science and engineering fields, like Stott did. And — at least at the dawn of the 21st century — they stood out.

"They definitely get appreciation," says Kevin Ford, a member of the 2000 astronaut class and the pilot of STS-128. "They had to come through a little tougher path to get there."

Stott's path began in Clearwater, Florida. Like most children of her generation, she watched the Apollo missions and the moon landing. She thought being an astronaut was cool, but it seemed far removed from her reality. Airplanes interested her more; her father flew them.

"I wanted my dad to show me not just how planes are built but how they fly," she says. "The idea of flying into space evolved from a love of flying in general."

She didn't want to be a pilot, at least not as a vocation. She wanted instead to become an engineer. She earned her private pilot's license and attended Embry-Riddle, earning a B.S. in aeronautical engineering in 1987.

She soon got her first job with NASA, as an operations engineer at Kennedy Space Center (KSC). Over the next decade, she held a number of positions at KSC and went to grad school, earning a master's degree in engineering management from UCF in 1992, which she says was "like the icing on the cake, preparing me for what I wanted to do with the astronaut office." She started to realize that going into space didn't seem so far-fetched.

So in 1998, she applied for the astronaut program. Two years later, she was accepted.

NASA officials told her class it would take about six years for them to get into space. In reality, it took nine as NASA assessed the loss of *Columbia* and its crew. In the meantime, Stott spent 18 days in 2006 living underwater as part of NASA's Extreme Environment Mission Operations program, earning the title of aquanaut and claiming the women's world record for saturation diving. But fly she did, as did all 17 members of her

class. And like most of them, she went to space twice.

The first time, she spent three months on the International Space Station, where she performed maintenance tasks, did a spacewalk, assisted with research activities, and helped track and capture a Japanese cargo vehicle.

On the space station, Stott says, astronauts' days are planned from the ground, sometimes down to 5- or 10-minute increments: when to wake up, when to eat, daily tasks, the occasional moment of free time and, finally, sleep.

As regimented as that sounds, Stott says, each day was a new adventure. "The only thing normal about every day is that every day is different."

But one day was more different than the others: September 1, 2009, her spacewalk. Her prep for the spacewalk began the day before with a deliberate process to remove nitrogen from the body since, like divers, spacewalkers are at risk of getting the bends. Just before the walk came another elaborate process: getting suited up. After that, the airlock was completely depressurized, and the hatch opened. She was in the void.

"I had spoken to a lot of people who had done spacewalks," Stott says. "People have come out of the airlock and felt immediately disoriented. I was very pleased to not experience any of that."

She and fellow spacewalker Danny Olivas had a couple of jobs that day. They had to remove a massive old ammonia tank and attach it to the station's robotic arm. They also retrieved a technology experiment to be returned to Earth.

Stott rode on the robotic arm for 20 minutes, holding the bulky tank in her hands. "I felt like I was standing on the floor," she says, "and everything else was moving around me." It was very peaceful, almost Zen-like — I could nap here, she thought to herself. "You don't want to do that," she adds.

During her stay, Stott did two things that no one else had ever done. She was the first person to paint in space. And about halfway through her tenure, Stott co-hosted the first live NASA "tweetup" from the station, interacting with Twitter followers at NASA headquarters in Washington, D.C.

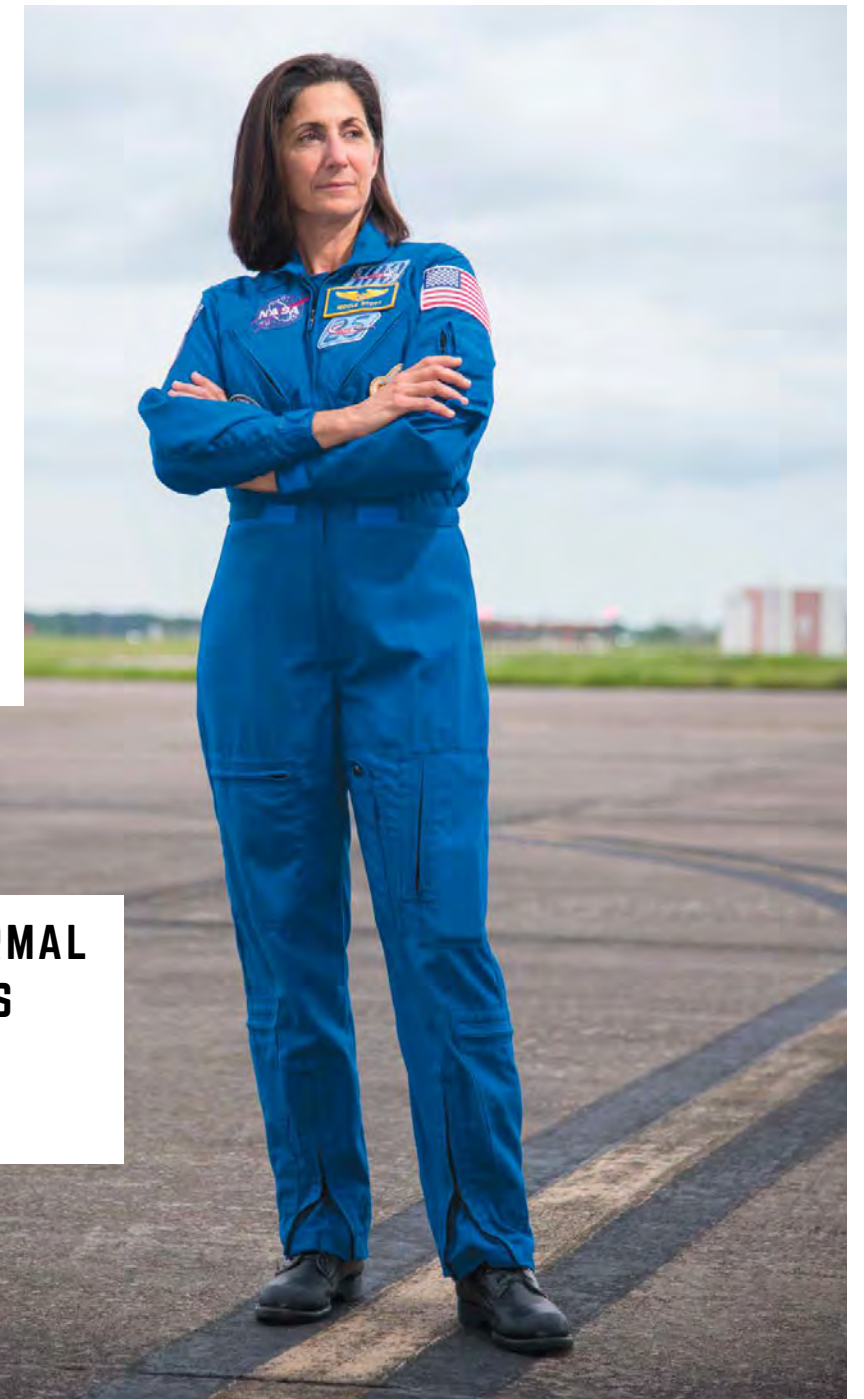
Stott had a knack for this sort of public relations, says Michael Barratt, who overlapped with Stott on the station for three weeks. She is "intense and really bright but also warm and affable. She could have been my long-lost sister, kidnapped by gypsies," Barratt says.

While on the station, she and Barratt were tapped for another, higher-profile mission, one for which the space agency wanted to put its best foot forward — the final space shuttle flight. (As it turned out, this was not the last one, but STS-133, which Stott was on, was *Discovery*'s 39th and final mission.)

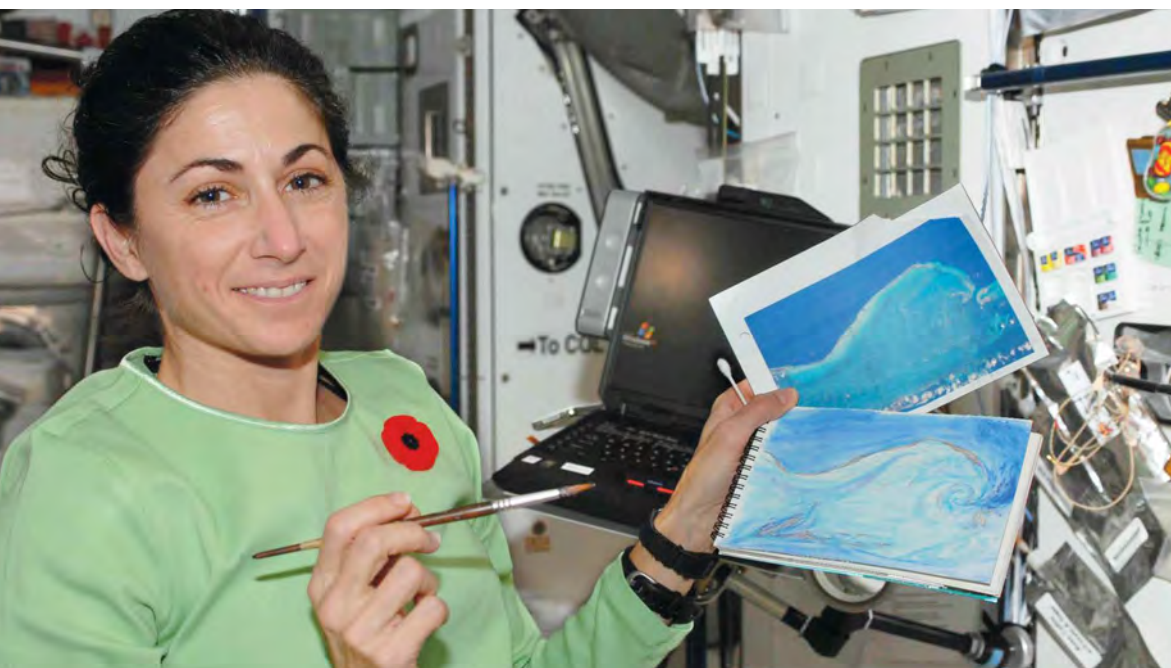
"We were looking for specific astronauts," says Steven Lindsey, who commanded STS-133, "with superb technical capabilities but that could also represent NASA well. [Stott] was specifically chosen because we knew she could do that."

"Everybody has members of a dream team," Barratt says. "She was on a lot of people's lists."

“
**THE ONLY THING NORMAL
 ABOUT EVERY DAY IS
 THAT EVERY DAY IS
 DIFFERENT.**
 ”



Clockwise from left: Stott and Michael Barratt participate in a training session in the Space Vehicle Mockup Facility in 2010; Stott at Johnson Space Center earlier this year; and commander Rick Sturckow, Stott and mission specialist Tim Kopra pose for a photo on *Discovery* while docked at the ISS.



In 2009, Stott completed the first painting done in space. The Wave is based on a photo taken through the window of the ISS. She has since created a mixed media piece (right) based on the same photo of the Los Roques archipelago in Venezuela.

Before she went into space, Stott remembers listening to the former Apollo astronauts, the guys who went to the moon, talk about seeing Earth from up there. The word she kept hearing was *insignificant* — as in, humanity and our little planet seem very small in this grandest scheme of things.

“That really bothered me,” she says. “How can ‘insignificant’ be the word?”

That wasn’t how she felt at all amidst the stars; she felt awed. Think about it: If the Earth was a little closer or farther from the sun, if the ionosphere and magnetosphere were not there to stave off solar flares, if the atmosphere wasn’t able to fend off X-rays and gamma rays, life here could never have emerged or evolved. None of what we know — our histories, our civilizations, our very consciousness — would exist.

We hit the cosmic jackpot.

One day on the space station, Stott says, she floated in front of a window and saw her home outside, so small and immense at the same time. “If we never find another one of us, that’s fine,” she thought. “It reinforces that we are significant; we were put in this perfect place for a reason.”

After her last mission, Stott led several different groups at NASA and was in line to fly again, but by 2015, she started to wonder if it wasn’t time to step aside, to tackle something new. She wanted to spend more

time with her son, Roman, who is 13. “From a family standpoint,” she says, “it was the best decision I could have made.” That didn’t make it easy, however. “You have to be in a place where you’re moving on to another adventure — not that you’re running away from something.”

That new adventure was her art.

She’d painted before; in fact, she’d grown up doing artsy-craftsy things like woodworking and painting Christmas cards. Before her first journey to space, she decided she wanted to do something creative while there, so she brought a small watercolor kit.

Her first painting in space — the first painting in space, made on the space station in 2009 — was a watercolor called *The Wave*, based on a picture she took from space of the Los Roques chain of islands, off the northern coast of Venezuela. To keep the paint from floating away, she dipped her brush into a drop of water before dipping it into the dry paint. The result was an image as seen from space, a thin stretch of green land jutting into a blue ocean.

“I wanted to find a way that would allow me to creatively express the experiences I’ve had,” she says.

She has two series of paintings. The first is what she calls the spacecraft collection, which captures life and work scenes from her space shuttle and space station flights. The other is a collection of paintings based on the photos she took from space — an effort to spread the message that “this is our planet, and we need to take care of it.”

In that vein, last year Stott was one of several astronauts who participated in a video message delivered to the diplomats gathered at the Paris climate conference, calling on them to act now to save the planet’s future.

And, as a speaker who visits schools all over the country, she also wants to inspire kids to do what she’s done in her second career: Blend art with science. The acronym is “STEAM,” a play on STEM (science, technology, engineering and math) with an “A” for “art” thrown in.

“There’s always been this need to keep the arts in play with the science and tech stuff,” she says. “Even the STEM people, if they really thought about it, they’d see that everything we do in engineering or in the lab, just being curious, is very artistic. The way we communicate math is very artistic, as is the imaging of astronomical data. It really all comes down to communication.”

Integrate art into STEM fields, she argues, and you’ll not only have more well-rounded students but more engaged students. “With STEAM,” she says, “we’re starting to realize that we need to think about education again in a more Renaissance kind of way.”

Similarly, she says, her time in space has made her fonder of science fiction. At its best, Stott says, sci-fi is a combination of artistry and science that tickles our imaginations and expands the boundaries of what we conceive as possible.

There’s another reason science fiction appeals to Stott: She hasn’t quite shed the space bug. “That desire to go into space will never go away,” she says. “When I’m 95, you can ask me if I want to go into space, and the answer will be yes, unequivocally yes.”

Jeffrey Billman '01 '10MA graduated from UCF with a B.A. in journalism and an M.A. in political science. He is currently the editor in chief of *INDY Week* in Raleigh-Durham, North Carolina.

“Our team has grown from a few guys working out of my spare bedroom in California and a garage in Orlando to an amazing 24-person group changing the way the world thinks of space exploration.”

JASON DUNN '07 '09MS
CHIEF TECHNOLOGY OFFICER, MADE IN SPACE

EXTRATERRESTRIAL INTELLIGENCE

When we first profiled **Jason Dunn '07 '09MS** in the spring 2014 issue of *Pegasus*, the company he co-founded, Made In Space, was preparing to install the first 3-D printer on the International Space Station. With that groundbreaking machine, they manufactured the first tool constructed in space — a wrench for ISS astronaut Barry Wilmore.

Today, their second-generation 3-D printer is operating on board the station, and they’re partnering with NASA, Northrop Grumman and Oceaneering Space Systems to develop the Archinaut, a 3-D printer equipped with robotics that will be installed in an external space station pod. While in orbit, Archinaut will manufacture and assemble large-scale, complex structures.



... THEY’D SEE THAT EVERYTHING WE DO IN ENGINEERING OR IN THE LAB, JUST BEING CURIOUS, IS VERY ARTISTIC.



CLASS NOTES

1972

Robert Munsey retired from the wireless telecommunications industry.

1979

Bettina (Tina) Pope retired from her position as a mental health recreational therapist.

1980

Dave Jernigan retired after 29 years as an FBI special agent and is now chief deputy of the Madison County Sheriff's Office in Huntsville, AL.

Mark Landau is chief operating officer for the Capstone Health Alliance in Asheville, NC.

1981

Bettie (Burleigh) Bailey retired.

1983

Martin Drake retired after 35 years in state and local government.

Michelle Ubben was named a "Top Woman in PR" by *PR News*.

1984

Bob Potter retired.

1985

Beverly Snyder has earned eight college degrees — three from UCF, including an Ed.D. in educational leadership in 2015.

1986

Jill (Niemann) Picerno was featured on CNTV in Denver.

Paul Taylor retired after 30 years in the insurance industry.

1988

Roy Reid is the executive director of communications for Adventist Health Systems' Florida Division.

Laura (Saunders) Parkel is the owner of Pond Science in Melbourne, FL.

1990

Michelle (Creery) Swift is a financial specialist at TreeHouse Private Brands in Omaha, NE.

Jean (Newell) Adams-Harris is a partner at Johnson Lambert in Jacksonville, FL.



IMAGE COURTESY OF DARIEN BAKAS / ARIZONA DAILY WILDCAT

Julie Iromuanya '04 was nominated for the 2016 PEN/Faulkner Award and the PEN/Robert W. Bingham Prize for Debut Fiction for her novel *Mr. and Mrs. Doctor*. The book explores the hardships of a Nigerian couple whose arranged marriage is based on an unraveling lie. Iromuanya's idea for the novel started as a character sketch during a creative writing class she took at UCF and was further developed during a trip to Nigeria.

1991

Mark Boyer earned an M.B.A. from the University of Tennessee at Chattanooga in December.

Erin Hankins is a regional human resources manager for Barton Malow.

1992

Cindy Dalecki was named Charitable Woman of the Year by the *Volusia/Flagler Business Report*.

Mark Deutsch is CEO of Pediatric Partners of Virginia.

1993

Chris Tomasso is the president of First Watch Restaurants.

Hector Vargas was listed in the *Leading Physicians of the World*.

1994

Joseph Keezel is a senior project manager in Dewberry's Orlando office.

Marcia King is participating in a yearlong fellowship for nursing leaders sponsored by Duke University.

Michael Thomas joined the board of directors for the Art & History Museums - Maitland.

1995

Armando Solares celebrated 10 years as a commercial and editorial photographer.

1996

Keisha Bell received a mayoral appointment to serve on the Community Planning & Preservation Commission in St. Petersburg, FL.

1997

Steve Conti was named volunteer leadership board chairman of the American Cancer Society - Central Florida.

Craig Evans is the vice president for advancement at Wells College in Aurora, NY.

1999

Mark Hales was named a principal at Inwood Consulting Engineers in Oviedo, FL.

2000

David Robertson was promoted to lead case manager at Family Physicians Group in Casselberry, FL.

Rob Tessmer Jr. was elected president of the Realtors Association of Citrus County for 2016.

2001

Ashley (Elmore) Drew joined Burr & Forman's financial services litigation practice in Tampa.

2002

Brooks Brunson is a member of the government relations department at Brownstein Hyatt Farber Schreck.

Jessica Davis was named a 2016 Ohio Super Lawyer in the field of personal injury and medical malpractice defense.

Jessica Simeone is a news assignment editor for BuzzFeed News.

2004

Laura (Creegan) Matthews was elected to the international board of directors for the Association for Student Conduct Administration.

Tamaria (Jackson) Williams is the director of developmental studies at Florida A&M University.

Cassandra Lafser was appointed as press secretary by Orlando Mayor Buddy Dyer.



IMAGE COURTESY OF KEN WEINGARTER / USTA

This September, top amateur harness driver **Hannah Miller '14** will represent the U.S. at the world championships — considered the Super Bowl of amateur racing — in Budapest, Hungary. Known as "Hurricane Hannah" for taking this male-dominated sport by storm, she became the first woman to win the National Amateur Driver of the Year Award in 2015.



"Hopefully I can encourage more women to start driving and get out there. It really is a man's world on the track."

— **Hannah Miller '14**

2005

Joe Ritter was promoted to senior vice president of business development at Seminole Financial Services.

2006

Laura Salpeter was named an associate at Cassel Salpeter & Co., an investment banking firm.

2007

Christopher Johncke is CEO of iFixYouri.

Christopher Levine wrote and stars in the movie *Perception*.

Tiffany Walters joined GrayRobinson in Melbourne, FL, as an associate litigator.

May and June Wong '09 founded MJ Tax & Consulting.

2008

Aaron Brown was appointed to the U.S. Army JAG Corps Reserve.

Andrea Ketcham is a business development executive with Fidelity National Title.

John Liberatore was promoted to regional director of ICS staffing and recruiting agency in Fort Lauderdale, FL.

2009

Jessica Anderson is an outreach coordinator for the Lake County Library System.

Christina Johnson is an operations specialist for Lennar Multifamily development group.

Carey Sobel was featured in the *Orlando Business Journal* for his marketing agency, Three21 Creative.

2010

Jason Clerkin is a corporate partnership manager with the Orlando Magic.

Jacqueline Rubio is the office manager at Singular Sleep.

Philesha Torrence practices law at Huggins Law Firm in Daytona Beach, FL.

2011

Esmaeil Banaei was named among the 2016 Faces of Technology by Florida High Tech Corridor.

Roberto Berrios passed the New York bar exam.

2012

Christopher Pombonyo was named Seminole County's teacher of the year.

Alexa Porter is a clinical assistant nurse manager for ORMC orthopedics.

Laura Scala is an attorney with Lesser, Lesser, Landy & Smith in West Palm Beach, FL.

Stephen Walker is a project manager at Levity Entertainment Group in Los Angeles.

2013

Frankie Catalfumo is serving as a Peace Corps health volunteer in Senegal.

Andrew Chang is a senior manager of market planning and research at Florida Hospital.

Lauren (Thyhsen) Love is a training director for Mathnasium.

Jacob Zepf is the president of Outfitters Company, an online men's fashion advice and buying club, which has a store in Winter Park, FL.

2014

Jeffrey White is a financial advisor at Raymond James.

2015

Edith Wakida is the pioneer research manager for medical faculty at Mbarara University of Science and Technology in Uganda.

In Memoriam

Richard Adicks, professor emeritus of English, passed away on August 15, 2015.

Briel Zagarow '07 passed away on January 26, 2016, after a long fight with cancer.

On June 12, 2016, two members of the UCF community were killed at Pulse nightclub. We mourn and honor student **Juan Ramon Guerrero** and alumnus **Christopher Andrew "Drew" Leinonen '07 '09MA**, and our hearts are with all of the victims, as well as their families, friends and colleagues. To see a full list of victims, visit cityoforlando.net/blogs/victims.

Weddings & BIRTHS

Robert Anthony '71 married Kimberly Perdue in November 2014.

1 Seth Daub '00 married Rodrigo Lenartowicz on January 16, 2016.

2 Heath Schoen '02 and wife, Rori, welcomed Mason Wriley on February 18, 2016.

3 Karin Grant '03 married Timothy Brown on November 21, 2015.

4 Maegan Hambor '03 married Marc McConkey on October 10, 2015.

5 Melissa (Laconca) '03 and **Tom Alexander '03** welcomed Nicholas on November 12, 2015.

6 Jennifer Skirrow '03 married **Matthew Meno '05** on November 29, 2015.

7 Jessica Malave '05 married Jeffrey Kessel on September 25, 2015.

8 Lauren (Haar) '06 married **Danny Waters '05** on October 24, 2015.

9 Heather Lee '06 and husband, Andrew Levy, welcomed London Fayth on August 31, 2015.

10 Krista Peckyno '06 married Brandon Thompson on December 19, 2015.

11 Jennifer Raposo '06 married Matthew Quinn on October 24, 2015.

12 Jaclyn Grass '07 married Wade Johnson on November 14, 2015.

13 Katie Johnson '07 married Chris McGrath on June 12, 2015.

14 Steve Lander '07 and wife, Jill, welcomed Luke Stephen on November 22, 2015.

15 Dana (Peacock) '07 and **Robert "Jake" Bebber '07** recently adopted Zachary.

16 Michelle Armesto '08 married Andrew Evans on October 18, 2015.

17 Erin (Brock) '08 and **Andrew Irvin '08** welcomed Hudson on April 29, 2015.

18 Aaron Brown '08 welcomed Aubrey Camilla on September 18, 2015.

19 Elizabeth Dellner '08 married **Michael Anthony Logsdon '07** on March 20, 2015.

20 Robin Denton '08 married Sloane Mathis on December 12, 2015.

21 Skye Guthrie '08 married **Eric Brown '12** on May 2, 2015.

22 Deana Kenny '08 married Heath Friedel on October 15, 2015.

23 Aaron Roppolo '08 married Rebecca Hebner on October 11, 2015.

24 Gina (Busciglio) '09 and **Matthew Messenger '07** welcomed Olivia Hazel on May 25, 2015.

25 Laura Donini '09 married **Ryan Verdel '05** on October 10, 2015.

26 Ricky Straub '09 married Brittney Norton on March 12, 2016.

Tracey Culbreath '10 married Brian King on August 29, 2015.

Lana Dickerson '10 married **Bryan Wagner '08** on October 30, 2015.

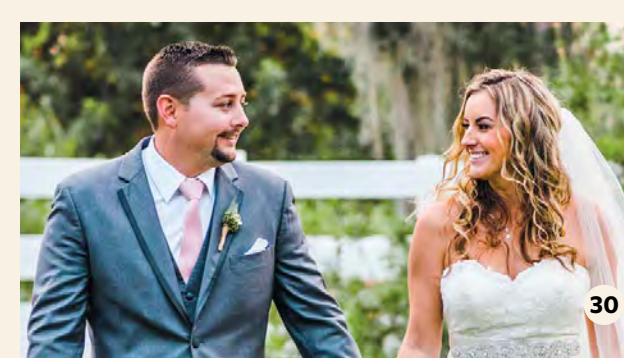
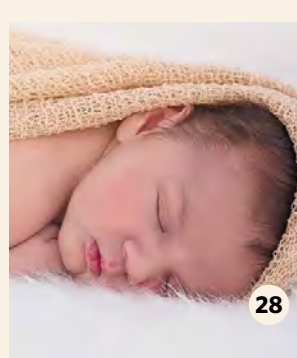
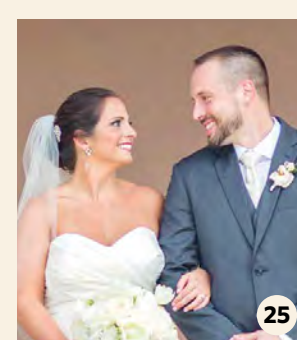
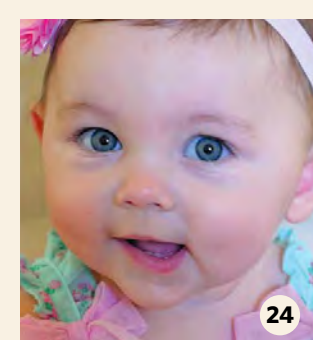
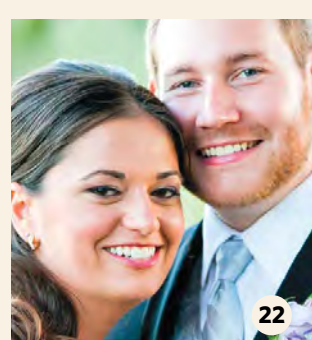
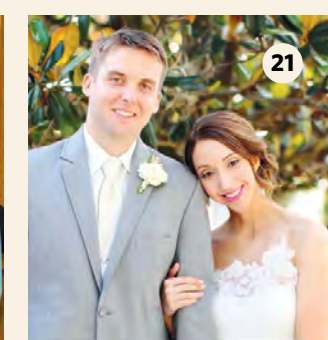
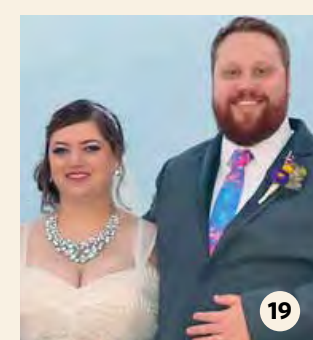
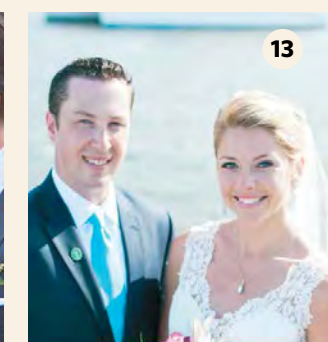
27 Savitre Geeratisoontorn '10 married Justin Schaefferkoetter on March 14, 2015.

28 Kaitlyn (Pearson) '10 and husband, Mark DeRosa, welcomed Daniel on February 9, 2016.

29 Alayna (Rivera) '10 and husband, Brenton, welcomed Clayton Paul on January 29, 2016.

30 Mallory Short '10 married Brett Woodley on January 30, 2016.

31 John Alexander '11 married Arla Cook on November 22, 2015.



Weddings & BIRTHS

- 32** **Lauren Alfano '11** married Charles Arnold on June 16, 2015.
- 33** **Brittany Burns '11** married Nicholas Chestnut on October 15, 2015.
- Paige Jarosz '11** married Michael Locke on December 31, 2015.
- 34** **Megan Reid '11** married **Daniel Andrews '12** on September 13, 2015.
- Kristin Serio '11** married Paul Dobrow on October 9, 2015.
- 35** **Lisa Sternschein '11** married **Garrett Dunn '09** on March 12, 2016.
- 36** **Elizabeth Theiss '11** married **David Morris '12** on October 3, 2015.
- 37** **Alycia Cardiff '12** married **Matthew Corpiel '14** on February 15, 2014.
- 38** **Megan Hale '12** married Blake Ford on November 7, 2015.
- 39** **Lindsay Howley '12** married **Richard Wellbrock '12** on February 6, 2016.
- 40** **Brittany Narzissenfeld '12** married **James Erigo '09** on April 11, 2015.
- 41** **Margaux Ring '12** married **Alex Pratt '13** on November 14, 2015.
- 42** **Jennifer Vigilante '12** married **Jake Howard '10** on June 5, 2015.
- 43** **Jessica Chodos '13** married **Todd Robbins '11** on April 25, 2015.
- 44** **Jenna Gwaltney '13** married **Jacob Booth '11** on May 30, 2015.
- 45** **Jennifer Andreasson '14** married **Isaac Babcock '04** on March 28, 2015.
- 46** **Melissa Ostrander '14** married Ty Stringfellow on December 12, 2015.
- 47** **Alecia Shore '14** and **Michael Patrick '14** welcomed Aiden on July 30, 2015.
- 48** **Alyssa Pirlo '15** married **Christian Weeks '15** on November 7, 2015.
- 49** **Stephanie (Rivera) '16** and **Matthew Forrester '09** welcomed Alexa on September 16, 2015.



ALUMNI Authors

Steve Durkee '82, who uses the pen name Steven Paul, wrote *Abused, Obscure or Misused Scripture* to help guide readers through the Bible, using multiple interpretations and translations.

Elizabeth (Leavens) Cruickshank '84 wrote *File 13*, which details the thrilling adventure of a duo on a mission to save the free world while on the run from the Russian Mafia.

James Kearns '85 wrote *Finding Proof of Jesus*, a compilation of stories and science that helps prove God's existence.

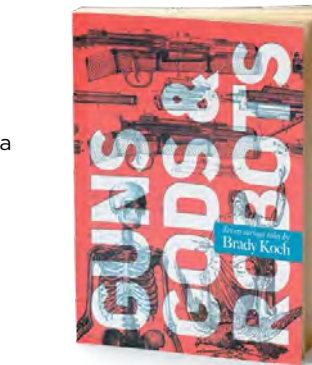
Jon Sargent '94 wrote *Male Nude: Hero Myth of the Masculine Journey*, which tells an original myth through haikus and nude black and white photography.

Mario Grasso '97 wrote *The Observer*, which contemplates the human instinct to let opportunities pass while worrying about possible outcomes instead.

Stephanie Sanders '00 wrote *The FILTER Approach: Social Communication Skills for Students with Autism Spectrum Disorders* as a guide for speech-language pathologists to help students who struggle with autism and social disorders.

J. Bradley '01 wrote *The Adventures of Jesus Christ, Boy Detective*, in which Jesus Christ is trapped in the body of a boy and is forced by his Father to solve mysteries.

Brady Koch '01 wrote *Guns, Gods & Robots*, a collection of sci-fi and horror stories about people struggling to solve problems.



Aimee McPartlan '01 wrote *Don't You Cry* and *Don't You Tell*, two books in a series about a social worker who helps children who have been abused by their adoptive parents.



Glenn Ricci '02 wrote *Through the Mind of an Artist: My Art, Influences and Inspirations - 1968 to Present*, which details the creative inner workings of an artist's mind.



Aryna Ryan '12 wrote *Creativity: The Ultimate Teen Guide*, a book to help teenagers cultivate their natural creativity, even if they don't know it's there.



LEGENDS: THE NEXT GENERATION

AN EXHIBITION FEATURING UCF ALUMNI

SEPTEMBER 6 - OCTOBER 13, 2016
UCF GALLERY

"Legends: The Next Generation" is the final event in the series Art Legends of Orange County, comprised of 15 exhibitions at cultural venues in Orlando. It features alumni of the School of Visual Arts and Design, including:

- Samuel Borkson '01
- Christopher Davison '02
- Kris Porter '02
- Elana Rubinfeld '02
- Perry Angelora '03
- Jason Scuille '03
- Nate Anspaugh '04
- Erika Heffernan '04
- Ian Larson '04
- Ginger Leigh '04
- Amanda Mathis '04
- Ryan Parker '04
- Nathan Selikoff '04
- Lisa Wicka '05
- Melissa Diaz '06
- Marla Hernandez '11
- Sherri Littlefield '12
- Bryce Hammond '13

SHARE YOUR NEWS

Send us your announcements and high-resolution photos (minimum 3 megapixels, 300 dpi).

Submissions are included as space permits. Class notes may be edited for length and clarity, and may be published in any medium.

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On the morning of October 24, 2014, I put on a special space suit, attached myself to a huge helium-filled balloon and began my ascent from Roswell, New Mexico. I kept rising through the blue sky until I reached 135,890 feet, where I nudged the darkened edge of space.

No human, without a rocket, has ever been higher. As I floated up there, suspended from the balloon, I could see the curvature of the Earth. And somewhere below, StratEx project flight director Sebastian Padilla began counting down: 5... 4... 3... 2... 1.

I broke free from the balloon, did a slow back roll and headed down, intent on advancing scientific knowledge and setting the world record for free falling.

During my nearly 26-mile drop from the stratosphere, I hit speeds of 822 mph. I broke the sound barrier, though I didn't feel any particular turbulence. But back on the ground, my team heard the thundering sonic boom. Four minutes and 27 seconds later, I opened my parachute and floated the last 10,000 feet in about 10 minutes to a safe landing.

To put that world record in local context, imagine sky diving a distance equivalent to walking from the Student Union on campus, all the way down University Boulevard, past Winter Park, past College Park and Ocoee, and into Winter Garden — in just four and a half minutes.

Why would I — a sane man in his 50s with a loving family and a great job as a vice president at Google — do something that must strike many as crazy? I'm no daredevil or thrill-seeker; I'm a computer scientist with three degrees from UCF. But growing up in Central Florida, I developed a love of space exploration. I saw NASA rockets blasting off from Kennedy Space Center, exciting the nation and leaving white trails in the sky.

I think, in some way, I always wanted to see where those trails led. I'd often wondered about the layers of atmosphere where rockets fly. And I'd become particularly fascinated by the last expanse on the edge of space — the stratosphere. It has surprising properties and temperature variations but is little studied.

Our project started with a simple question: Is it possible to build a scuba diving system for stratospheric exploration? Previous attempts to skydive from high altitudes had always included using a capsule, but capsules are heavy, expensive, complex and dangerous.

After a year of painstaking research, I was convinced there was a simpler, safer way. A smarter person would have declared success, written a paper and moved on, but I wanted to build the new system and, more importantly, I wanted to fly it.

So began a three-year engineering odyssey involving some of the brightest and most supportive people I know. First, I needed to validate my idea — I wanted an expert to confirm it was well-grounded and not a flight of fancy. A close friend suggested I talk to Taber MacCallum from Paragon Space Development Corporation. They make suits for hazardous environments and build environmental systems for spacecraft. MacCallum not only believed it was possible, but he assembled the best talent at his company to develop a plan. Paragon had contacts at ILC Dover, the perfect space suit company for the job. We recruited Mark Procos at United Parachute Technologies to build the parachute systems, world-famous balloonist Julian Nott to consult, Jonathon Clark to serve as flight surgeon, and Don Day as the chief meteorologist.

Over the next three years, we ran more than 250 system tests as we slowly learned to do something no one had ever done before. We redesigned the parachute system 11 times. We completed five airplane tests from 18,000 feet, and three balloon tests from 57,000 feet, 105,000 feet and the record flight at 135,890 feet.

In the end, our team not only set a world record, but we invented several new technologies for stratospheric exploration. Rather than turn our effort into a media event, we invited only one reporter to the record-breaking attempt, and we worked with Jerry Kolber, the executive producer of the TV series "Brain Games," to produce the documentary *14 Minutes from Earth*. It premiered at the Tribeca Film Festival in mid-April in New York.

Our hope is that the film and my jump will excite a new generation of students to challenge themselves, explore their world and redefine what is possible.

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