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CELEBRATE! INNOVATION MAGAZINE IS PUBLISHED BIANNUALLY BY DES MOINES AREA COMMUNITY COLLEGE WEST CAMPUS. FOR ADVERTISING OR CONTENT INQUIRIES, CONTACT:

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COVER PHOTO:

THE PHOTO IS OF A GLASS FROG ON THE BARELY-EXPLORED REWA RIVER. I WAS THERE IN 2009 TO CONDUCT A BIODIVERSITY SURVEY, AND ENDED UP INFLUENCING THE PRESIDENT'S DECISION TO REVOKE ALL THE GOLD MINING CLAIMS FROM THE RIVER AS A RESULT OF THE ASTOUNDING LEVELS OF BIODIVERSITY THAT WE DISCOVERED

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EDITOR'S NOTE

*A few days ago, I returned from a weekend in Las Vegas.
For the uninitiated, Vegas, for the most part, lives up to its reputation.*

The Strip, or main drag, is glitzy, over-the-top, extravagant, at times hedonistic. The mere mention of Vegas suggests everything MORE: more lights, more entertainment, more gambling, more food, more *everything*. Nearly every experience there is immediate—and I can only imagine the innovation, creativity, and logistics necessary to create (and continuously recreate) such a spectacle. Yet, as the authors in this edition of *ciMagazine* remind us, we don't have to travel to Vegas to see such extravagance. As Sara Seager in "The Search for Exoplanets and Our Place in the Cosmos" notes, to discover a world where "seemingly anything is possible" one must simply look up at the untapped potential of exoplanets and the vast galaxies that surround us.


Of course, some avoid visiting a place like Las Vegas for the same reasons others find it appealing—the unfamiliar environment, the uniqueness, the wild, untamed atmosphere. In fact, it's pretty easy for the term "wildlife" to come to mind as one attempts to maneuver a packed casino floor. No matter how extravagant (or startling) such an experience can seem in the

moment, it pales in comparison with the opportunity to spend time in the truly wild places around our globe. Most of us will only read about such adventures in nature, and fortunately, we have the opportunity to do so in this issue. Global adventurer Dr. Niall McCann, in "Accept What We Can't Change or Change What We Can't Accept," describes the modern challenges of conserving wildlife and wild places, and how those adventures, such as efforts to save and protect wild Mauritius kestrels, shaped the type of person he is today.

I generally visit Las Vegas every couple of years, always during the winter, which makes for a pleasant change from a cold, gray Iowa. A Midwest winter is quiet, contemplative, tempered by patience. Yet we remain surrounded by innovation as well, which, much like the promise of winter, is tempting to take for granted. Wells Fargo, a diversified, extensive financial services company, is one of the largest employers in the state. In "Moving Money: Checks to e-commerce," Marianne Babal shares how Wells Fargo implemented innovative means of money transfer and payment throughout its history

to better serve customers. Moreover, as Danny Beyer explains in "A Cup of Coffee," innovative thinking can happen anywhere people have the chance to get together and share ideas, and in Iowa—anywhere, really—there are plenty of opportunities to do just that.

Look around. The lights on the Vegas Strip can be breathtaking, the sights and sounds dazzling. Yet we don't have to look far, no matter what the setting, to experience a sense of amazement through the wonder of nature or simply by someone's innovative idea: the miracle of wireless money transfer, the search for new planets and galaxies, the desire to reach out to others in a more personal way, even when surrounded by technology. All ideas—the splashy and the quiet, the tame and the wild—work in tandem to make our lives better.



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FIGURE 1: DARK SKY



BY DR. SARA SEAGER

THE SEARCH FOR EXOPLANETS

and Our Place in the Cosmos

Looking at the sky on a clear, dark night, the stars are countless. Each of those stars is a sun (Fig. 1). Our Sun has a planetary system with eight planets, several dwarf planets such as Pluto, an asteroid belt, a Kuiper belt of small icy bodies, fascinating moons, and more. Since our Sun has a planetary system, it seems logical other stars (that is, other suns) should have systems also. And they do. We call them “exoplanets.”

In the last two decades, astronomers discovered nearly 5,000 exoplanets. Statistically speaking, every star in the sky should have at least one planet. The most fascinating find: the huge variety of known star and exoplanet systems. Some stars have giant planet-like Jupiter that orbit where the Earth would be. Other stars have planets like ours, but orbit ten times closer to their star than Mercury. Some stars have “super-earths,” rocky worlds bigger than Earth but smaller than Neptune. Others have planets that orbit two suns (Fig. 2A and 2B). Some stars have planetary systems consisting of several planets all orbiting interior to where Venus should be (Fig. 3).

One of my favorite reasons for working in exoplanets is that anything seems possible. If one can imagine a planet—as long as the scenario obeys the laws of physics and chemistry—it’s probably out there. Of the planetary systems found so far, none fully resembles our solar system, which must be somewhat rare. Admittedly, finding solar system copies remains difficult due to current planet-finding techniques.

Our Sun is one of hundreds of billions of stars bound together by gravity in a galaxy called the Milky Way, which is one galaxy out of hundreds of billions in the Universe. When I look at the stars, I wonder how many planets like Earth might be out there. Do those Earths have intelligent life looking out at the stars wondering the same thing?

One of my favorite reasons for working in exoplanets is that anything seems possible. If one can imagine a planet—as long as the scenario obeys the laws of physics and chemistry—it’s probably out there.



FIGURE 2A: IN THE LIGHT OF TWO SUNS, THIS ILLUSTRATES KEPLER-16B, THE FIRST PLANET KNOWN TO DEFINITELY ORBIT TWO STARS—OR A CIRCUMBINARY PLANET. THE PLANET SEEN IN THE FOREGROUND WAS DISCOVERED BY NASA’S KEPLER MISSION. CREDIT: NASA/JPL-CALTECH/T. PYLE



FIGURE 2B: SUNSET FOR THE EXOPLANET KEPLER 16B. SOURCE: WIKIPEDIA COMMONS

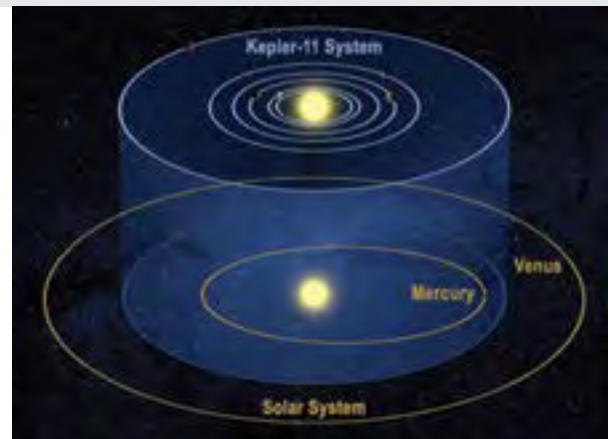


FIGURE 3. ARTIST’S CONCEPTION SHOWING THE KEPLER-11 PLANETARY SYSTEM AND OUR SOLAR SYSTEM FROM A TILTED PERSPECTIVE TO SHOW KEPLER 11 PLANETS ALL ORBIT CLOSE TO THEIR STAR. IMAGE CREDIT: NASA/TIM PYLE.

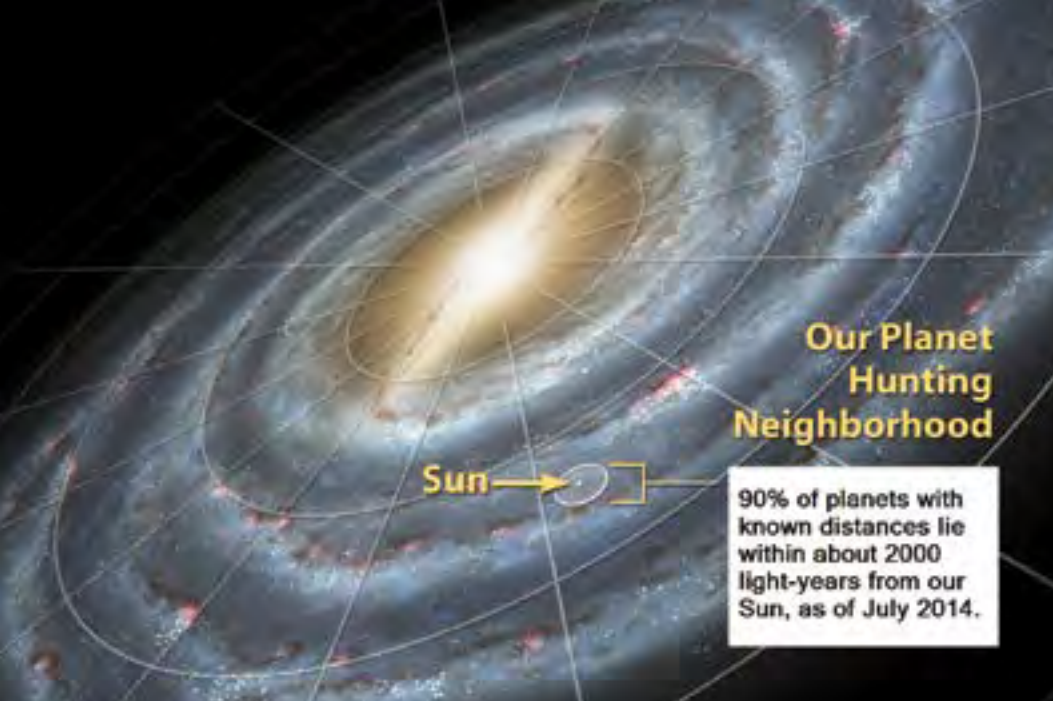


FIGURE 4: AN ILLUSTRATION OF THE MILKY WAY. IMAGE CREDIT: "PLANET DISCOVERY NEIGHBOURHOOD IN MILKY WAY GALAXY" BY NASA JET PROPULSION LABORATORY

Although thousands of exoplanets are known, including many Earth-size planets, technology can't yet determine if a planet is like Earth with oceans, continents, and breathable air, or if a planet is like Venus with a massive greenhouse atmosphere making the surface scorching hot and inhospitable to life (Fig. 4).

I am often asked why I study exoplanets. The main reason is scientific curiosity. How did our solar system and Earth form and evolve? Are there planets like Earth with continents, oceans, and thin atmospheres with clouds? Will those Earths have signs of life by way of biosignature gases in their atmospheres?

An example is related to the theory of planet formation. The most common type of planet astronomers have found so far is a planet two to three times the size of Earth, one with no solar system counterpart. This astonishing finding has sent planetary theorists back to the drawing board. In our solar system, Uranus and Neptune are about four times the size of Earth, but the theory of their formation is somewhat contrived. So we do not know how the most common type of planet in our galaxy formed.

A second reason for studying exoplanets applies to any area of science and technology: unexpected yet life-altering spinoffs. A long list of everyday tools only exists because of applications or byproducts of pure research. The list includes but is not limited to the laser (with its ubiquitous applications from scanning barcodes to surgical uses), medical imaging, DNA testing for forensics and medical uses, the Internet, and GPS. We must support the

I am often asked why I study exoplanets. The main reason is scientific curiosity.

sheer volume of pure science research needed to enable such technological breakthroughs because, although rare, they are invaluable transformative.

A third reason for studying exoplanets and space science is to showcase our nation's technical prowess. In the case of exoplanets, space telescopes above the blurring effects of Earth's atmosphere are often required for exoplanet detection and characterization. The James Webb Space Telescope (JWST) (Fig. 5) is sometimes called the next generation Hubble Space Telescope, with seven times the collecting area and an infrared wavelength capability. Several innovative technologies developed for the JWST include a folding, segmented primary mirror, adjusted to shape after launch;



FIGURE 5: THE SUNSHIELD ON NASA'S JAMES WEBB SPACE TELESCOPE PHOTO CREDIT: NASA.

ultra-lightweight beryllium optics; detectors able to record extremely weak signals; microshutters that enable programmable object selection for the spectrograph; and a cryocooler for cooling the mid-IR detectors to an unprecedented 7K!

Demonstrating our technology by way of civilian space science is important. We do not wish to publicize our defense-related technologies, and industry holds commercial products (including spy telescopes and large deployable systems for radio communications) proprietary. There is an additional, tangible value of investment in big, complex scientific and technological projects, and that is maintaining our leadership of innovation and inspiring the next generation of technological leaders.

Finding a true Earth twin—a planet the same size and mass as earth, with water oceans and a thin atmosphere—requires complicated space technologies. An Earth, or any rocky planet that could have surface liquid water, would be small and dim compared to its large, bright, parent stars. Finding an Earth twin around a Sun-like star is like trying to see a firefly fluttering less than a foot from a huge searchlight—when that searchlight is 2,600 miles away! (This is about the distance from New York to Los Angeles.) With a powerful telescope, we might see the firefly's faint glimmer, but that glimmer becomes imperceptible in the searchlight's overpowering glare. In numbers, Earth is 10 billion times fainter than the Sun at visible wavelengths. To understand this number, think about what one can buy for one dollar. Now think about what one can buy for 10 billion dollars. The problem in observing Earth twins is not so much the faintness of Earth—it is the glare of the adjacent, 10-billion-times brighter star.

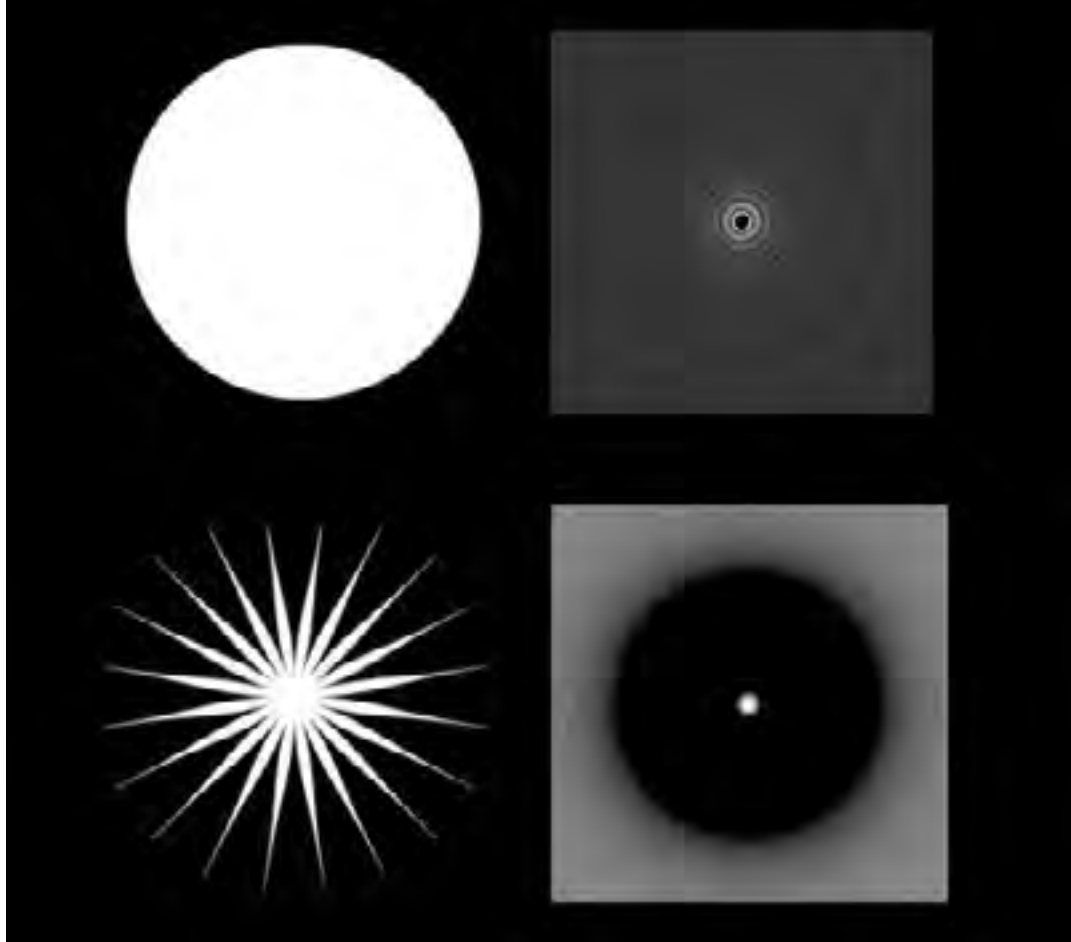


FIGURE 6. ILLUSTRATION OF THE DIFFRACTION PATTERN (TOP RIGHT) AROUND A CIRCULAR OBJECT (TOP LEFT). ILLUSTRATION OF THE DIFFRACTION PATTERN (BOTTOM RIGHT) AROUND A STAR-SHAPED OBJECT (BOTTOM LEFT).

Finding an Earth twin around a Sun-like star is like trying to see a firefly fluttering less than a foot from a huge searchlight—when that searchlight is 2,600 miles away!

What would it take to directly image an Earth? First, we would need a space telescope to get above the blurring effects of Earth's atmosphere. Second, we need to get around a problem that even the most flawless space telescope would still run into: diffraction, or the spreading of light rays as they encounter a surface (FIG. 6). A telescope observing a distant star will not see a perfect

point of light. Instead, the telescope would see a pattern of diffraction rings. Think of dropping a pebble in a pond. Instead of just a drop in the water, waves ripple outward from the stone. That's what the light is doing: creating waves around the telescope mirror and other optical surfaces. The problem? For any reasonably-sized telescope, these diffraction rings can be up to 100,000 times brighter than an Earth-like planet! To directly image an Earth, we must not only block out the light of the 10-billion-times brighter parent star, we must deal with diffraction.

Astronomers and engineers developed clever ways for diffracted light to change from being part of the problem to being part of the solution. My favorite way is the concept of launching a giant screen to block out the starlight, so only planetary light would enter the space telescope. The screen, called a starshade, would be in space and



FIGURE 7A: THE STARSHADE CONCEPT. IMAGE CREDIT: NASA/JPL/CALTECH.



FIGURE 7B: A PROTOTYPE PETAL FOR A GIANT STARSHADE BEING STUDIED BY NASA FOR A FUTURE PLANET-HUNTING MISSION. THE PETALS WOULD UNFOLD IN SPACE TO BLOCK THE LIGHT OF DISTANT STARS—SO AN ACCOMPANYING TELESCOPE CAN ATTEMPT TO DIRECTLY IMAGE ALIEN PLANETS. CREDIT: NASA/DOUG LISMAN.

would fly in formation with a space telescope tens of thousands of miles away. The screen could not be circular for the reasons of diffraction described above. Instead of using a circular screen that creates rings of light, astronomers discovered special shapes that produce the appropriate light pattern. The special shape uses a diffraction pattern to make part of the image dark—dark enough to find planets. The specially shaped starshade ensures the starlight pattern is in other parts of the image where it will not interfere with planet detection. Observing with the starshade would be like dropping the pebble in a pond, but the area around the pebble would be perfectly smooth, and the waves would be pushed outside the smooth area (FIGS. 6, 7A, AND 7B).

The special shape to control diffracted starlight could also be put inside the telescope, and in this case, a telescope's mirror has to be smooth—a thousand

times smoother than the width of a human hair! Even in the vacuum of space, physical disturbances make the mirror shape change by that tiny amount all the time. So the mirror must not only be nearly perfectly smooth, but its shape must be corrected constantly in real time.

Many astronomers are working hard to make these ideas work in labs, prepping the technology for putting in a space telescope. Lab demonstrations already show that the light-blocking techniques can work.²

A fourth reason for discovering and characterizing exoplanets is inspiration for STEM education. From the complicated space telescopes to the concepts for exoplanets moving from science fiction to scientific fact, exoplanets and, specifically, the promise of finding other Earths offers major opportunities for deep public engagement. People everywhere are inspired by the new and ongoing

exoplanet discoveries, and many seek involvement, either students via STEM education or others through grassroots, Internet-based, citizen-science projects. In 2009, the Vatican hosted a group of astronomers to inquire about the status of the search for potentially life-harboring exoplanets. In 2013, congressional testimony expounded upon the status of the search for life beyond Earth (FIG. 8)³.

People worldwide, from individuals to organizations, are increasingly realizing that finding life elsewhere would forever change how we see ourselves and our place in the cosmos.

My final and personal reason for the search for exoplanets is focused on the eventual discovery of other Earths around the nearest sun-like stars. Consider this a mapmaking endeavor of our Sun's neighborhood in space. The reason is exploration. I think of my great grandparents who, one century



FIGURE 8: DR. SEAGER AND LAMAR SMITH, CHAIRMAN OF THE HOUSE COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

ago, left an impoverished, persecuted existence in the Ukraine to start a better life in North America. I wonder what it was like for them as newlywed young adults to leave home on a one-way trip, to embark on a lengthy, possibly dangerous voyage across the Atlantic Ocean to the unknown New World with the only certainty being a permanent goodbye to their families.

Then, I think of my descendants 1,000 years from now who may be able to travel to a new world, an Earth-like planet orbiting a nearby sun-like star. I wonder what it will be like to say goodbye to their home planet and embark on a potentially dangerous interstellar journey that will take years or decades. Will they travel in a state of extended hibernation? Or live on a multi-generational spaceship? Will the advances in biology enable their DNA information to travel and get printed out

as human beings on arrival?

Either way, I believe hundreds or a thousand years from now, our descendants will find a way to embark on interstellar journeys and travel to nearby star systems. They will look back upon us in the 21st century as those who first found Earth-like worlds.

Dr. Sara Seager is a planetary scientist and astrophysicist at the Massachusetts Institute of Technology. She is a pioneer in the vast and unknown world of exoplanets. Her groundbreaking research ranges from the detection of exoplanet atmospheres to innovative theories about life on other worlds to the development of novel space mission concepts. Dubbed an “astronomical Indiana Jones,” she is on a quest after the field’s Holy Grail—the discovery of a true Earth twin.

Before joining MIT in 2007, Dr. Seager spent four years on the senior research staff at the Carnegie Institution of Washington preceded by three years at the Institute for Advanced Study in Princeton, NJ. Her doctorate is from Harvard University. She is on the advisory board for Planetary Resources. Dr. Seager is a 2013 MacArthur Fellow, the 2012 recipient of the Raymond and Beverly Sackler Prize in the Physical Sciences, and the 2007 recipient of the American Astronomical Society’s Helen B. Warner Prize. Dr. Seager has been recognized in the media, most recently in *Nature*’s Top Ten in 2011, and *TIME Magazine*’s 25 Most Influential in Space in 2012, and is now the Class of 1941 Professor of Planetary Science.

For more information, visit <http://seagerexoplanets.mit.edu/>

DR. SARA SEAGER WILL PRESENT *THE SEARCH FOR EARTH 2.0* AT THE DMACC WEST CAMPUS ON THURSDAY, MARCH 5, AT 11:30AM ON THE MAIN STAGE.

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DR. NIALL McCANN IS AN EXPLORER AND BIOLOGIST WHO DEDICATES HIS LIFE TO THE PRESERVATION OF WILDLIFE AND WILD PLACES. (PHOTO CREDIT: ANDY DITTRICH)



BY DR. NIALL McCANN

ACCEPT WHAT WE CAN'T CHANGE

or Change What We Can't Accept

At some point, most, if not all, of us must accept what we can't change or change what we can't accept. Some people, of course, choose the easy path and simply accept, or at least tolerate, things they feel are beyond them. The rest—those few people determined to alter their circumstances—are the ones we admire and follow.



DR. NIALL McCANN'S INTEREST IN WILDLIFE STARTED AT A YOUNG AGE.

As a biologist, I am often in the position of witnessing change in the natural world, most of which is for the worse. Rivers are polluted, forests are chopped down, and wildlife is hunted or squeezed out of existence. All of this happens at a rate so extreme that the current geological epoch is informally known as the Anthropocene¹. I accept most people live in blissful ignorance of the negative effects that industrialization and human demographic expansion have on the natural world, but I genuinely believe if more people knew about what was happening, they would want to change things.

At one crucial point in my career, I realized I couldn't stand by and let destructive things happen. I had to try to make a difference. So, I dedicated my life to not only addressing the issues at the coalface through my work in conservation, but also to raising

As a thinking species, it is a moral imperative to devise ways to live in harmony with the natural world.

awareness of environmental issues in the most visible way through my work in the media.

Conservation of our wildlife and wild places is one of the most important issues. Wild animals have a right to life, and their natural environments have a right to exist. People are wild animals too, of course (some wilder than others!), but we are in the privileged position of being able to contemplate our options, choose our destinies, and influence the destinies of those around



GOLD MINING CLAIM NAILED TO A TREE ON THE REWA RIVER IN GUYANA.

us. As a thinking species, it is a moral imperative to devise ways to live in harmony with the natural world.

It was only natural that I would set my mind on a career in the natural sciences. I was an insatiably curious child, and my parents nourished my curiosity with a house full of nature books and camping holidays to far-off wild places. I

collected animal cadavers in my parents' freezer and spent my free time running around the forests near our home. From there, I gained work experience with the Department for Environment, volunteering on a wolf research project in Italy. Then I set off for 20 weeks to work for the Mauritian Wildlife Foundation on some of the rarest birds on earth.

In Mauritius, I was exposed to truly brilliant scientific minds and to people who genuinely had an impact on the way the world looks. In 1974, only four wild Mauritius kestrels were left on earth, including one breeding female. Dr. Carl Jones, my boss in Mauritius, was sent to shut down the conservation project designed to save the species, as it was deemed futile. Instead of shutting the project down, Jones was determined to save the species himself, and by the time I joined his team in 2000, there were around 800 kestrels living wild in Mauritius². Jones went against the wishes of his superiors, undermined the gloomy forecast for the kestrels, and saved a species on his own. What a wonderful legacy!

I left Mauritius to complete a degree in zoology at Bristol University and organized my first major expedition to study giant otters in Bolivia, supported by grants from the Royal Geographical Society and other generous organizations. After graduating,

*By protecting the park,
we preserved it for future
generations, who I hope
will be wiser about their
use of those natural
resources than the
current generation.*

I worked on wildlife projects as a researcher, experienced adventures, and travelled to exotic places, but something was missing. I was enjoying myself while contributing to the sum of knowledge, but I wasn't changing the world, and I knew it!

In 2009, I was in Guyana with my friend and long-time expedition companion, Dr. Rob Pickles, where we documented 50 percent of Guyana's endangered species on one small river, the Rewa, during a five-week expedition in a remote area.³ When we returned to the capital, Georgetown, we discovered gold miners had staked their claim to the river and could begin mining at any moment. The miners use mercury as an amalgam to bind the particles of gold together and make them easier to spot. Mercury kills everything. If gold mining were to commence, the Rewa River and all those wonderful plants and animals that lined its banks would be no more.

Rob and I were dismayed. We had just been to a pristine part of the world, and suddenly, we were faced with the genuine possibility that this wonderful place could be destroyed overnight! As soon as we returned home, we published a detailed report about the area, documenting both the exquisite nature of the biodiversity of the Rewa River and the explicit nature of the threats facing it.⁴ This report, widely circulated, ended up in the hands of the right people back in Guyana. To our delight, six months after we returned from Guyana, those gold mining claims were revoked by Presidential decree, as a result of our report, or so we thought.

We were absolutely thrilled! We had done something real! Our work influenced the President of Guyana to intervene. That got me thinking: yes, our work contributed to the conservation of the Rewa River, but our contribution was indirect. The person who really made



DR. NIALL McCANN HOLDING THE SKULL OF A BAIRD'S TAPIR POACHED IN CUSUCO NATIONAL PARK, HONDURAS.

the impact was the one who took the report to the President and laid out the importance in terms he could appreciate. I wanted to be that person.

Later that year, I started work on my doctorate, studying the conservation status of Baird's tapir in Honduras. I'll forgive you if you haven't heard of Baird's tapir as they are, I freely admit, a rather obscure forest mammal. They are also the largest mammal in the Neotropics, and among the most endangered, which is why I wanted to study them. Honduras is a remarkable country for many reasons. Similarly rich in terms of biodiversity as Costa Rica, Honduras has seen a fraction of the attention from research institutions, meaning many places remain un-surveyed. Also, Honduras has the highest murder rate in the world with nearly twice the murder rate of Mexico, partially attributable to the huge increase in the trafficking of cocaine through its



MARIJUANA PLANTS FOUND INSIDE CUSUCO NATIONAL PARK, HONDURAS.



DR. NIALL McCANN'S LOVE OF TAPIRS CONTINUES

borders in recent years⁵. The violence isn't just concentrated in cities. Much of the country is like the Wild West, and my field work was in places where the average person would wear a .44 Magnum around the house, just in case.

My work took me to four protected areas in Honduras, with almost one

year spent in the field, during which I captured the first camera trap video footage of Baird's tapir in the country and recorded tapir in one national park for the first time. After three years of my study, it was clear tapir were rapidly declining in Cusuco National Park, which I returned to each year. Not only were they declining, but they were

declining at a rate that could see them be extirpated from the park in under a decade, if hunting levels persisted.⁶

For years my research colleagues who worked Cusuco attempted to lobby the Institute for Conservation and Forestry (the government department that manages national parks) to control the increases in deforestation and poaching, but their requests always fell on deaf ears. In 2012, things got serious. More tapir were confirmed poached in Cusuco National Park, more deforestation took place, and then, while searching for tapir deep in the core zone of the park, I discovered a marijuana plantation. Drugs had arrived in Cusuco.

I knew this was my chance to try to stop the rot in Cusuco. But I also knew my colleagues tried for years to demand action to no avail. I thought back to what happened in Guyana. Those gold mining claims were revoked when someone walked into the President's office and asked him to revoke them. So, I took a punt; if I was going to achieve anything, I had to aim for the top. After a few phone calls, I somehow arranged for a meeting with the Honduran Minister for Environment.

I went to that meeting armed with graphs of tapir declines and deforestation reports plus photographs of tapir skulls and marijuana plants. I told the Minister and his entourage what we needed was for him to authorize military patrols in the park to protect it from wrongdoers. I sat down after my presentation and expected to hear a few platitudes followed by a polite rebuttal. The Minister smiled and announced that he agreed something must be done; he was particularly fond of tapirs, he said. And then came the bombshell—he was going to call the Minister for Defense that very day and ask him to authorize the military patrols!



THROUGH HIS WORK IN THE MEDIA, DR. NIAL McCANN HOPES TO BRING THE PLIGHT OF ENDANGERED SPECIES, SUCH AS THE MOUNTAIN GORILLA, TO THE LARGEST AUDIENCE POSSIBLE.

On August 21, 2012, a group of soldiers guided by Roger Alvarenga, my personal guide and friend, set out on a two-day patrol in Cusuco National Park, and with that simple act, I helped protect a national park in a foreign country. I did this partially for the sake of my beloved Baird's tapir, but also for the sake of the people who lived near the park, who relied upon it for their livelihoods. Places like Cusuco aren't just refuges for obscure mammals; they generate the rain that communities require for their drinking water and farms; they house the insects they require to pollinate their crops; they protect the soil from erosion and flooding; they attract scientists and ecotourists whose dollars fuel local economies; they do so much more besides. The situation in Cusuco was a perfect example of a tragedy of the commons. Everyone was scrambling to get a share of what was left at a rate that would leave nothing for anyone. By protecting the park, we preserved it for future generations, who I hope will be wiser about their use of those natural resources than the current generation.

Encouraged, I set my sights on protecting more national parks in more countries, using the same tactic I used

in Honduras—targeting the people who make policies and convincing them to act. Politicians listen to the people, and if the public wants wildlife and wild places preserved, then politicians will listen. This is why I believe my work in making wildlife documentaries is so important; I aim to bring conservation stories to the living rooms of people everywhere, to encourage them to take interest in the natural world and do something to protect it.

At the start of this piece, I said I genuinely believe that if more people knew about what was happening to the world, more people would want to change things. It is amazing how much destruction happens simply because people haven't realized or haven't chosen to acknowledge what is going on. I'm sure this was the case with the President of Guyana and with the Honduran Minister for Environment, and I'm sure it is also the case for the vast majority of others. Through my work in the media, I hope to make people aware of the conservation crises facing some of the most precious ecosystems and iconic species on earth, and I hope that once people are aware, they will not stand by and let the world as we know it disappear. My strength lies in

Dr. Niall McCann was born in Victoria, Canada, into a family of adventurers and grew up in Shrewsbury, in England's most rural county: Shropshire. McCann studied zoology at the University of Bristol and completed his doctorate at Cardiff University, studying Baird's tapir, the largest mammal in the Neotropics and one of the most threatened species in all of the Americas.

McCann has dedicated his life to seeking out adventure in the natural world, either in combination with his zoological studies or on stand-alone adventures. He has spent over two years on expeditions on six continents.

Dr. McCann debut in 2011 with the PBS documentary *Lost in the Amazon: The Enigma of Col Fawcett*, aired on the History Channel in the UK. This documentary, which won two international awards, landed McCann a six-part wildlife adventure series *Biggest and Baddest* with the Discovery Channel.

For more information, visit www.niallmccann.com/

DR. NIALL MCCANN WILL PRESENT *LIFE ON THE CONSERVATION FRONTLINE* AT THE DMACC WEST CAMPUS ON WEDNESDAY, MARCH 4, AT 11:30AM ON THE MAIN STAGE.

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communication: in communicating science, in communicating the importance of conservation, and in inspiring others. If I can excite people about anacondas, crocodiles, or cassowaries while they watch TV at home, I can certainly excite politicians about the importance of preserving natural resources.



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BY DANNY BEYER

A CUP OF COFFEE *Can Change The World*

I grew up in small-town Iowa where every morning the business owners and farmers congregated at local restaurants. The conversations centered on the weather and crops. Occasionally, high school football or basketball teams doing exceptionally well interrupted this trend. I remember thinking how great it would be when I could spend my mornings sipping coffee and bantering with old friends.



THE BENEFITS OF COLLABORATION. BIGSTOCK PHOTO. USED WITH PERMISSION.

Coffee shops or similar settings provide the ideal environment for exchanging ideas. They are an open space for people to connect.

is given credit for inventing the Web, but it took years of work by teams of various expertise to create the backend networks that support our online surfing.³ Very few revolutionary innovations happen without help.

This is why networking is crucial to innovation. Real innovation and creativity take the mingling of ideas to solve problems. It means connecting unrelated ideas or objects and creating something new. Great innovation cannot happen by itself because of a need for connections and outside influence. Even if one person has an incredible idea, it still takes a team of trusted partners to see that idea to fruition.

Take the story of a Swiss hiker named George who took his dog for a walk one afternoon in 1948. Upon returning home, he noticed his companion's fur covered in cockleburs. This intrigued George. He took out his microscope to examine the burrs. He discovered each pod was covered in natural hooks that could cling to fabrics and furs. These hooks gave the plants the ability to travel far distances and distribute their seeds. They also gave George an idea.

He began working on a prototype fabric with hooks on one side and a companion fabric with loops on the other. George de Mestral invented Velcro, a fabric that has allowed shoes to

In the big city, places like Starbucks, Caribou, and Panera intrigue me, not for their caffeinated beverages, but for the environment and community they provide. Spend enough time in any coffee shop, and you'll start to see the same faces having the same conversations.

Sure, people still make idle chitchat about the weather and weekend plans. But something more important is taking place. Sales people meet with prospects and clients. Entrepreneurs pitch ideas to investors. Professionals meet with one another to network. Every day of every week, millions of dollars exchange hands as networks are built, relationships are formed, and ideas are exchanged.

In his July 2010 TED Talk, writer Steven Johnson argues that, without the gathering places like coffee house, the Enlightenment would not have

happened. Coffee houses gave people from different backgrounds a “space where ideas could have sex.”¹ Johnson explains how most great, innovative ideas started in a coffee shop.

Coffee shops or similar settings provide the ideal environment for exchanging ideas. They are an open space for people to connect. Organizations such as Google and Apple now provide similar spaces inside their headquarters. They encourage their employees to network, exchange ideas, and allow those ideas to mingle into bigger, better ideas.

One person may have a good idea, but it takes a network of perspectives and experiences to make that idea great. Steve Jobs' idea for an MP3 player came about in the late '90s, but it took a talented team of innovators to create the first iPod.² Tim Berners-Lee

stay on toddlers and rockets to be sent to space. However, this breakthrough would never have seen the light of day without help from Mestral's network.

Initially, Velcro was met with resistance and laughter, but Mestral stuck by his invention and was able to partner with a weaver from a textile plant in France to perfect the hook and loop fastener.⁴ In 1955, he patented his design and later formed Velcro Industries, which today is a multimillion-dollar business operating worldwide. It is all thanks to a walk, one man's curiosity, and his ability to work with others.⁵

A solid network can even help new ideas happen by accident. In mid-2012, I started wearing bow ties after a couple of close friends encouraged me to do so. Initially, I took a lot of grief with references to Pee Wee Herman and the like. Over time, the bow tie became part of my image, and the banter subsided. Assuming it was merely a fad, I was surprised by a text message my friend, Zac, sent me on December 12, 2012.

The text was innocent enough—a selfie of Zac with the caption “Hey buddy, it's Bow Tie Wednesday. Are you wearing a bow tie?” I responded with my own, proud, bow-tie selfie. He photoshopped the pictures together and posted them to Facebook announcing it was Bow Tie Wednesday.

We received immediate and overwhelmingly positive responses from both of our networks. We knew we had something. An official Bow Tie Wednesday Facebook page was created the following day, which quickly gained a following. To date, we have received pictures from people all over the world proudly wearing their bow ties on Wednesdays.

Zac and I are philanthropic people. We met at a coffee house one afternoon and decided if our silly Facebook page could get 500 likes, we would create a

This is why networking is crucial to innovation. Real innovation and creativity take the mingling of ideas to solve problems.

bow-tie-centered event to raise money for a local charity. We hit that number three short months later.

After another coffee house meeting with brainstorming and collaborating, we created the First Annual Bow Tie Ball in 2013. This unique and fun event centered on a bow tie we designed to feature the charity of our choice, Variety. We used our Twitter network to find a designer who could get our bow ties produced. We found sponsors through our business connections and through their connections. A single selfie sent on a cold December afternoon helped raise close to \$25,000 for local charities over the past two years.

Being innovative or having the next big idea doesn't happen in isolation. It takes inspiration. It takes connecting unconnected ideas into something new.⁶ It takes perspective and expertise from a variety of backgrounds and conducive environments. Even if you're lucky or creative enough, ideas are useless without other people's support.

Those farmers back in the coffee shop of my hometown were part of an innovation cycle. By exchanging techniques, ideas, and wisdom through years of experience, they helped their own and the next generation achieve great success. They built relationships, created trust, and changed the communities they loved all under the guise of a cup of black coffee and a friendly hello each morning.



Danny Beyer is a networking specialist and bow-tie aficionado. Through his network, he achieved success in both his professional and personal lives. He helped organize the Des Moines Area LinkedIn Social—an event that drew hundreds of professionals from throughout the Greater Des Moines area to build real-life connections. In 2013 he co-founded the Bow Tie Ball, a charity event centered on bow ties and networking that raised more than \$20,000 for Young Variety. His book *Ties that Bind: Networking with Style* is due on shelves in early 2015.

Beyer is a keynote speaker on networking and building real connections and frequently blogs on those topics for the Des Moines *Business Record*. In 2013, he was chosen the Amy Jennings Young Professional of the Year through the Greater Des Moines Partnership's Young Professionals Connection and was selected to the 2014 *Business Record* 40 Under 40 group.

For more information, visit www.dmacc.edu/ciweek

DANNY BEYER WILL PRESENT *NETWORKING & INNOVATION: HOW A CUP OF COFFEE CAN CHANGE THE WORLD*. AT THE DMACC WEST CAMPUS ON MONDAY, MARCH 2, AT 6:00PM, ON THE MAIN STAGE.

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COMPLETION OF THE OVERLAND TELEGRAPH WIRES PUT THE PONY EXPRESS OUT OF BUSINESS IN 1861.



BY MARIANNE BABAL

MOVING MONEY

Checks to e-Commerce

Money may make the world go around, but it is the ability to transfer money from one individual to another for payment that keeps the global economy moving.

As innovative technologies advanced human capacity for communication, practical application of these technologies to commerce—specifically transfer of funds and payments—soon followed. Early American merchants and citizens relied on coins, checks, bank notes, and other financial instruments to transfer wealth and make payments. Businesses and bankers relied upon government mail service or private messengers to conduct long-distance transactions, a process that took days, even months, to complete.

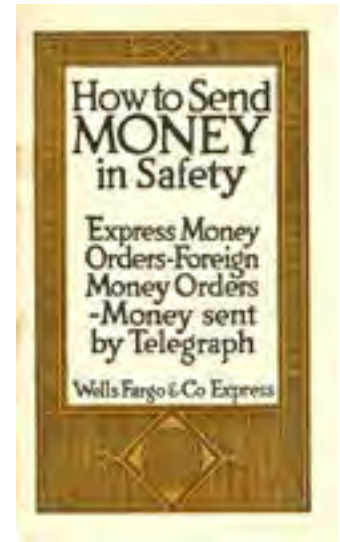
Complications of time and distance greatly hindered business expansion. The express business in America emerged to help merchants and bankers deal with the logistics of conducting long-distance business. In the early 1840s, Henry Wells, a pioneer in the express business in the northeastern states, carried valuable letters, documents, packages, and money for customers while traveling by canal boat, stagecoach, steamship, and railroad. With William Fargo, Wells founded Wells Fargo & Company. A decade later, they extended their express and banking services west to California.¹

In 1844, Wells observed the sending of messages over Samuel F.B. Morse's demonstration Electro-magnetic telegraph line between Baltimore and the U.S. Capitol in Washington. Recognizing the potential of this innovation, Wells quickly invested in telegraph building ventures in upstate New York and across the Canadian border.¹

Congress authorized Morse's pioneering telegraph line to test the usefulness of the new technology. In a report to the Treasury Department in June 1844, Morse detailed several examples of important communications sent on the line including news of James K. Polk's nomination as a candidate for President of the United States at the Democratic Party convention in Baltimore.¹



BANKERS ENCRYPTED MONEY MESSAGES USING CIPHER BOOKS.



WELLS FARGO & CO'S EXPRESS ADVERTISED TRANSFER BY TELEGRAPH.



CHECK SENT BY RADIO, 1926.

Another practical example involved credit verification for a financial transaction. A Baltimore man needed to know if a check from the Bank of Washington was good. He telegraphed an inquiry to Washington, where a messenger was dispatched to the bank to determine if the payer's account had adequate funds. After an affirmative

answer quickly arrived by telegraph, the businessman completed the transaction with speed and confidence.

Messages sent over telegraph wires not only revolutionized communications, but the "lightning wire" also directed movement of money over great distances, initiating transactions in mere minutes that before took days or weeks. The telegraph held great promise to widen trade circles by reducing risk that often limited financial dealings. Telegraph communication also increased access to information on current prices in commodities markets and stock exchanges, so that a sale in New York was known in Chicago minutes later.²

By 1850, some 22,000 miles of telegraph wires connected commercial centers in the eastern United States. After completion of the transcontinental telegraph in 1861, telegraphic transfers of funds became a coast-to-coast service offered by banking and express companies such as Wells Fargo & Co., which first advertised telegraphic transfers of funds in 1864. Commercial banks also routinely handled financial transactions using the telegraph. Western Union, the nation's largest telegraph enterprise, initiated its own money transfer service in 1871.



POSTER ADVERTISING WELLS FARGO MASTER CHARGE CARDS, 1968.



ONLINE BANKING SOFTWARE, 1992.

Sending money and messages by wire required new security measures to shield confidential information. Banks and businesses such as Wells Fargo used encrypted code words that appeared as nonsense words in transit. These nonsense words would then be decoded by the end recipient using the proper cipher code book. Since Wells Fargo handled much of the gold and silver mined in western states, the company developed advanced encryption standards to safeguard treasure shipments.³

Just as businesses recognized the usefulness of instantaneous communication via telegraph, they were also among the earliest adopters of the speaking telephone, patented by Alexander Graham Bell in 1876. The first commercial telephone exchange opened in New Haven, Connecticut in January 1878, connecting 39 businesses and 11 private residences through a rudimentary switchboard that could only handle two conversations at one time. In 1878, San Francisco's first telephone directory listed 170 subscribers including Wells Fargo & Cos Bank. The telephone immediately became an indispensable tool for financiers and captains of industry. Banker J.P. Morgan once

Linking personal computers over high-speed networks—known initially as the World Wide Web—brought remarkable innovation in communications and commerce.

boasted that his associate, George W. Perkins, could raise 20 million dollars in 20 minutes by telephone.⁴

One early 20th century technological innovation made it seem possible to pull money right out of the air. In 1924, Radio Corporation of America (RCA) engineers demonstrated photoradio technology, which enabled transmission of facsimiles of documents or photographs via radio using specialized photoelectric scanning equipment. On August 21, 1926, an RCA representative in Hawaii sent a pictoradio check over the airwaves to San Francisco, where receiving and printing equipment reproduced a facsimile that included a handwritten signature. This radio-transmitted check, drawn on Wells Fargo Bank & Union Trust Company in the amount of 500 dollars, was promptly presented to the paying teller at the bank and cashed, completing the first money transfer using facsimile

technology on the Pacific Coast. Commercial use of radio facsimile technology never gained real traction beyond use by news media, however.⁵

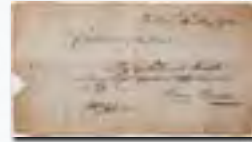
For decades, the transmission of electrical impulses over a wire communications line—essentially telegraph technology—continued as a main system to exchange funds and payments. Wire transfers through terminals connected by two-way telephone communication networks were used by institutions and corporations in need of same-day, secure payment transfers. The Federal Reserve's Fedwire system and similar networks connected financial institutions around the world. Regional automated clearing houses enabled efficient collection and settlement among financial institutions by sorting and exchanging electronic payment data on computer tapes and disks.

From 1950 to 1980, consumers also accepted new technologies for electronic funds transfer. Plastic credit and charge cards, automated teller machines, and ATM/debit card-reading terminals in retail stores for point-of-sale payments all changed the way people shopped and managed money. As microcomputers went mainstream in the 1980s, Wells Fargo and other banks set up systems allowing customers to use personal computers to access accounts, manage money, and make payments using dedicated software packages.

CONTINUE ON PAGE 29



INTERNET BANKING AD, 1995.



Early checks were simply signed, handwritten instructions enabling bank customers to transfer funds to a designated payee or obtain funds from deposit accounts. For example, on May 18, 1782, Philadelphia businessman Owen Biddle wrote the cashier of “the bank” to pay a sum to his brother, Clement, the bank unnamed because there was only one commercial bank in the country at that time was the Bank of North America, which opened in Philadelphia on January 7, 1782. As checks gained popularity and banks multiplied, printed blank checks became the norm. Checks were, in effect, credit instruments, requiring banks to present each cashed check back to the bank of origination for clearing and payment from the account of the check writer. The logistics and cost of shuttling stacks of checks back and forth between banks resulted in establishment of centralized clearing houses that simplified the process of check collection among member banks. The volume of checks written by businesses and individuals rose continuously, and by 1952, Americans wrote eight billion checks annually.

This growing checkbook avalanche threatened to overwhelm the banking industry since during the collection process, a single check might be handled a dozen times by multiple banks. In 1959, a committee organized by the American Bankers Association recommended an automation solution: coding checks with bank routing and account numbers in magnetic ink, sortable and readable by machine. Since 2004, the Check Clearing for the 21st Century Act allows banks to clear checks using digital images rather than actual paper checks.⁹

Linking personal computers over high-speed networks—known initially as the World Wide Web—brought remarkable innovation in communications and commerce. On February 14, 1995, Wells Fargo became the first U.S. bank to process a secure payment transaction between an Internet business and an online shopper. The pioneering Internet retailer was Virtual Vineyards, founded in 1994 by Robert Olson. A veteran of several of Silicon Valley's tech firms, Olson recognized the potential of using early web browsers in a consumer marketing interface. Initially, Olson failed to sell his concept of building software for interactive web-based stores to retailers, who did not yet recognize the reach the Internet would make into consumers' wallets. Olson's market research concluded that wine would be the perfect product for online sales, especially vintages produced by small wineries without widespread distribution networks. Olson and his brother-in-law, Peter Runoff, a noted wine expert, joined their talents to found Virtual Vineyards in 1994.^{6,7}

Their business venture needed to raise capital first, then find a payments processor who could make Internet transactions possible. A conversation between Olson and a tech-savvy Wells Fargo Bank executive led to an experiment by Wells Fargo's electronic payments team to successfully combine online merchandising with secure online credit card payments. Wells Fargo teamed with Cybercash Inc., a start-up Internet payments company developing protocols for transferring data between merchants and banks. The pilot project tested online ordering at Virtual Vineyards' website and simultaneous transmission of encrypted credit card payment information to the bank, which would authorize the transactions electronically, then bill the customers' credit card accounts using bank data transfer networks. Virtual Vineyards' online shopping website



Today, continuing innovations in mobile payments technology may finally launch us into a cashless and checkless marketplace.

went live in January 1995, and Internet commerce was underway.⁸

Since then, in the short span of two decades, the Internet and wireless networks have radically changed the way we communicate and conduct our business, just as the telegraph did generations before. Today, continuing

Marianne Babal is Vice President and Senior Historian with Wells Fargo Historical Services, where she has led historical research and exhibit projects for Wells Fargo & Company since 1994. She holds an M.A. in history from the University of California, Santa Barbara, and is past president of the National Council on Public History, a worldwide association of professional historians.

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GREATEST, RECOGNIZED.



#1

“America’s Top 5
Under-the-Radar
Tech Hubs”

The SpareFoot Blog, 2014

#2

“Best City for
Business and Careers”

Forbes, 2014

#1

“Strongest Local
Economy”

POLICOM Corporation, 2014

The Greater Des Moines Partnership is the economic and community development organization serving Central Iowa. The Partnership is a proud sponsor of Innovation Week and believes that our community’s prosperity stems from

FEARLESS THINKING AND BOLD IDEAS.

By supporting our innovators, we are supporting the future of our region.

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INNOVATION IS ALIVE

and Well in Iowa

As the economic and community development organization serving central Iowa, the Greater Des Moines Partnership promotes innovation as a way to grow our economy and create opportunities for new capital investments. One vehicle for that promotion is our annual Celebrate Business and Economic Impact Awards. These awards recognize central Iowa organizations that advance innovation to improve products or services.

By acknowledging innovative and enduring business initiatives, the Greater Des Moines Partnership hopes to encourage more innovation by recognizing several local businesses with Bridgestone Americas sponsoring the 2014 awards. Bridgestone Americas manufactures Firestone agricultural tires in Des Moines and employs approximately 1,500 people. Working from his ideals, Harvey S. Firestone, in 1900, established the innovation and performance that built Firestone's reputation in agriculture. These ideals are embedded in the foundation of Firestone's brand.

In November 2014, the ReWall Company of Des Moines was recognized with the Innovation Award. The ReWall Company uses proven European technology to recycle polyethylene-coated cups and cartons into building materials. Many ReWall products are manufactured in Des Moines and distributed nationally.

During the last two decades, Skiff Medical Center, a 2014 Innovation Award honoree, enhanced the quantity and quality of healthcare services in rural America where care is typically diminished. Skiff's facilities expanded and remodeled, plus Skiff Medical Center made technological

improvements as well. Their strategic partnership with Philips Healthcare allowed Skiff to establish a world-class imaging center with better equipment to provide patients with fast, accurate diagnoses. The technology is some of the most advanced in Iowa.

Also based in Des Moines, Athena GTX, recognized in 2013 and 2014, developed the Wireless Vital Signs Monitor (WVSM)[®] for the military to use at point-of-injury on the battlefield. The WVSM[®] attaches to a blood pressure cuff, runs automatically, and transmits wirelessly ECG, heart rate, blood oxygen, and blood pressure

data. It replaced cumbersome monitors carried by military medics. Although the technology was developed for the military, feedback indicated a need for this in the civilian market. Athena GTX is now working with Florida physicians to integrate the WVSM® into a computerized home health monitoring system that may prove useful to a nationwide market.

Each of our Innovation award-winning businesses has a great story, but volumes of stories remain yet to be told, and some yet to be written. Currently, the agbiosciences industry girds for an innovation revolution demanded by burgeoning food, material, and energy challenges. Regional and statewide leaders from private industry, higher education, and government joined to form Iowa's Cultivation Corridor to serve as an engine to further central Iowa's role as a global magnet for talent, research, and investment. Iowa's agbioscience community is virtually unmatched, with nine times the national average of people working in the ag and feedstock chemicals sectors, and more than 20 percent of the regional market employed in agbiosciences. The result: unmatched bioscience career, research, and investment opportunities in central Iowa's Cultivation Corridor.

As it develops and markets Iowa's world-renowned bioeconomy, the Cultivation Corridor builds on a rich history of innovation to enhance environmental sustainability and accelerate business development by attracting companies, talent, and capital.

Perhaps no other sector in Iowa is more firmly established at the head of the global innovation table than the agricultural biosciences—a massive, highly-complex field involving raw material production (crop and livestock production, equipment manufacturing, etc.), material conversion to feedstock (chemical conversion), and industrial feedstock use (food, fiber, fuel). Globally-dominant companies, cutting-edge research and development, and a robust talent pipeline position central Iowa at the pinnacle of the field, which is poised to play an outsized role in the global



cultivation CORRIDOR

The science that feeds the world.

economy in the next century.

To meet the demands of a global population reaching nine billion by 2050, humanity will need to produce more food in the next 50 years than it has in the last 10,000 years combined. Companies including John Deere, DuPont Pioneer, Monsanto, Stine Seed and institutions including the Iowa Farm Bureau, Iowa Economic Development Authority, Iowa State University, and the Greater Des Moines Partnership serve as stakeholders in the effort to ensure that Iowa meets this staggering challenge.

The Cultivation Corridor boasts 60 percent more veterinarians, 79 percent more biological technicians, and 150 percent more food scientists than the national average. In the second and third quarters of 2014, central Iowa saw more than \$1.7 billion in agbioscience-related public and private sector investment activity, which advance Iowa's dominant position as a leader in world-class career opportunities.

Des Moines-based Kemin Industries, a nutritional ingredients company with more than 1,000 employees in 60 offices worldwide, is in the midst of a \$125 million expansion project at its southeast Des Moines campus. The project includes a 90,000-square-foot headquarters, added warehouse and manufacturing space, and a \$16.7 million research-and-development center that opened last year. The project created more than 140 job opportunities in Des Moines.

Kemin's seven divisions collectively develop and produce products used by more than 1.4 billion people every day. With a diversified approach, the company offers bioscience career opportunities in fields including animal nutrition and

health, companion animal, nutraceuticals, pharmaceuticals and medical devices, personal care, and food technology. Working and making a difference in a global field is possible in the Cultivation Corridor thanks to international leaders such as Kemin.

DuPont Pioneer, founded in 1926 by future U.S. Vice President Henry A. Wallace and a group of Des Moines businessmen, today serves as the United States' largest agricultural producer of hybrid seeds. The company, headquartered in Johnston, recently announced a state-of-the-art seed treatment center as part of a \$50 million expansion in the Des Moines metro. The facility, which will join another in Wilmington, Delaware, will be the first of the company's planned DuPont Integrated Seed Science Network and will play an integral role in the expansion of its seed treatment business. Researchers and lab technicians will conduct cutting-edge plant science research at the new facility, expected to be completed by summer 2015.

With the DuPont Pioneer's project nearing completion, the company expects to begin production this spring at one of the country's first commercial-scale cellulosic ethanol production facilities at Nevada, Iowa, near the northern anchor of the Cultivation Corridor in Ames. The \$200 million facility will produce 30 million gallons of cellulosic ethanol-alcohol—derived from crop residue instead of grain and employ 60 full-time employees. The company will annually produce ethanol from about 590,000 bales of corn stover from a 30-mile radius, helping create a more competitive market for crop residue material.

At its best, innovation drives meaningful change while supplying economic opportunity. The Greater Des Moines Partnership will continue to work together with the 21 Affiliate Chambers of Commerce representing central Iowa's business community to advance innovation across industries and businesses. The 5,000 business members represented by our Affiliate Chambers, and Iowa as a whole, all stand to benefit.

F R E E T O P U B L I C

TO BOLDLY GO

CIWEEK 6

MARCH

2-6
2015



celebrate! innovation
week

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WELCOME TO



Welcome to ciWeek 6!

It's hard to believe it's been five years since our first Celebrate! Innovation Week. That year, we featured only one keynote speaker (Alan Bean, the fourth man to walk on the moon) and a huge number of breakout sessions led primarily by DMACC faculty and staff. Since then, ciWeek has become recognized as one of central Iowa's premier events.

Each year, I'm asked about the purpose behind ciWeek. The most meaningful approach to storytelling is direct interaction with the people who are the stories; the living creators of new ideas and innovations. Through direct engagement with the who behind the what, the stories come alive. They have a direct, emotional impact on those fortunate enough to hear them including DMACC students and central Iowans.

This year's theme, "To Boldly Go..." was inspired by the voiceover introduction to one of television's most successful franchises, *Star Trek*, and this year's speakers truly represent those who have boldly gone forward: whether it's

Dr. Hugh Herr, a cutting-edge bionics engineer who, having lost his legs in a climbing accident, replaced them with something you might see in the *Terminator*; Dr. Sara Seager, a MacArthur grant recipient who made it her life's work to search the Universe for exoplanets; Dr. Niall McCann, a conservationist and adventurer who, while wrestling alligators and anacondas, made major strides in helping to protect endangered species; or Dr. David Gallo, who not only explored the Titanic but discovered many of the ocean's secrets.

Of course, a theme like "To Boldly Go..." wouldn't be complete without a member of the *Star Trek* family. LeVar Burton, who played Geordi La Forge,

chief engineer for the Enterprise on *Star Trek: The Next Generation*, will share what it was like working with the creator of *Star Trek*, Gene Roddenberry. Burton will also discuss his passion in life, children's literacy. He recently helped raise over \$5.4 million through more than 100,000 investors to bring *Reading Rainbow* back to life.

Listening to the great stories and experiences of our diverse group of speakers always inspires me, and I hope everyone enjoys a fantastic time getting inspired as well.



ciWEEK 2015 AT A GLANCE

All events held at Des Moines Area Community College West Campus,
5959 Grand Avenue, West Des Moines, Iowa.

MONDAY, MARCH 2, 2015

Kick-Off Events

6:00PM

KEYNOTE: DANNY BEYER

*Networking & Innovation: How a Cup of Coffee Can
Change the World*

TUESDAY, MARCH 3, 2015

Kick-Off Events

6:00PM

KEYNOTE: TOM EAKIN

Finding Success Takes a Tenacious Failure

WEDNESDAY, MARCH 4, 2015

8:45AM

CONCURRENT SESSIONS

(see pages 36 for descriptions)

10:00AM

KEYNOTE: DR. ANTHONY PAUSTIAN

Lawn Jarts, Twinkies, and a Guy Named Jim

11:30AM

KEYNOTE: DR. NIALL MCCANN

Life on the Conservation Frontline

12:45PM

LUNCH BREAK

1:30PM

KEYNOTE: DR. HUGH HERR

The New World of Human Bionics

6:00PM

KEYNOTE: CASSIE LEE & CLAYTON ANDERSON

The Future of U.S. Manned Space Flight

THURSDAY, MARCH 5, 2015

8:45AM

CONCURRENT SESSIONS

(see pages 37 for descriptions)

10:00AM

KEYNOTE: DR. DAVID GALLO

Deep Sea-Deep Secrets: Exploring Neptune World

11:30AM

KEYNOTE: DR. SARA SEAGER

The Search for Earth 2.0

12:45PM

LUNCH BREAK

1:30PM

KEYNOTE: LEVAR BURTON

Passion and the Lessons Learned

WEDNESDAY, MARCH 4, 2015**> 8:45AM–9:45AM****IGNITE THE POWER WITHIN**

AUDITORIUM—ROOM 202C: EDINA NAPRELJAC

Edina Napreljac will share life lessons and knowledge attained through her self-discovery process. She will speak to the importance of continuous mental, physical, and spiritual evolution while sharing techniques to conquer negativity. She will also reveal resources one can leverage to recover from challenging life experiences, rebuild confidence, and enhance self-assurance.

IOWA INVENTIONS THAT CHANGED THE WORLD

ROOM 121E: KIRK HARTUNG

Iowa history has seen significant inventions that have been leading-edge or even revolutionary. While many of these inventions and their inventors are unknown, this session will unveil these lost secrets of innovation, technology, and entrepreneurs that have Iowa roots. The inventors were born, educated, or worked in Iowa, and their inventions span more than 100 years of mechanical, chemical, biology, electronics, and information technologies. We can proudly claim that these inventors as Iowans. Come learn who they are and what they did to change our world.

WINDOW TO THE WILD

ROOM 219E: JESSIE LOWRY

From tiny insects to the largest of land mammals, animal species are fading away. We must find a way to coexist with nature and inspire the public to take real conservation action to preserve our world's beautiful biodiversity. Jessie Lowry will take you on a journey to discover the current state of our animal populations and how zoos play a lead role in saving them. She will also share how diligence, passion, and patience set her on a path to become an effective conservationist.

PASSION AS ART, ART AS BUSINESS

ROOM 212W: JENNIFER COLEMAN

The world of photography is full of beautiful complexities, simple joys, and plenty of frustrations. A global art form, photography continues to evolve from a long history of invention and innovation, preserving the past while presenting the future. Ultimately, photography results from the creative synergy of those who participate, all working from the same core principles to bring life to visions, dreams, and moments never to be lived again. In this session, we will concentrate on those core building blocks, illustrating how to capture, edit, and present work from a professional point of view.

WRITING PANEL

ROOM 223E: LAUREN RICE, MARC DICKINSON & MATT ALBERHASKY

MYTH: Creative people are born creative. You either are creative, or you are not.

REALITY: Creativity and creative thinking can be cultivated. Most artists and writers develop their creativity through years of work and diligent practice.

Join us for a lively, open discussion of how to develop your creativity and creative thinking for creative writing, college courses, the workplace, and beyond.

BREAKING THE CAREER CODE

ROOM 123E: TOM HENDRICKSEN

According to a recent Gallup poll, only 13% of people worldwide feel engaged at work. Many people have given up on careers being rewarding and fulfilling. In Breaking the Career Code, we will cover the three P's that will help you find a career match:

PASSION: Through our Life Audit, you will discover your true passions.

PERFORM: You will uncover which areas allow you to perform at your best.

PROFIT: You will identify the most profitable ventures based on your skills and abilities.

If you want a challenging and satisfying career, this session can help you break your Career Code!

THURSDAY, MARCH 5, 2015

> 8:45AM–9:45AM

LIFE PROBLEMS SOLVED WITH AGILE

AUDITORIUM—ROOM 202C: KRISTIN RUNYAN

Agile is a software methodology many businesses use successfully to enhance communication, effectiveness, decision-making, and quality to deliver more value to customers. The universal principles behind Agile can help solve problems in daily life by improving study habits, increasing knowledge, and enhancing marketability to current and future employers. Join Kristin Runyan to learn more about this powerful and simple way to incorporate Agile in your life by adopting a few simple habits.

EVERY PIXEL BUILDS A STORY

ROOM 212W: SHAWN FITZGERALD

The art of storytelling is as old as time, yet our digital world unleashed an incredible, new, imaginative realm for future storytellers. This session will introduce the process of creating visual stories using digital editing tools.

IOWA RIVERS REVIVAL—THE VOICE FOR IOWA'S RIVERS

ROOM 219E: ROZ LEHMAN

Iowa Rivers Revival (IRR), a non-profit leader in river education and advocacy, remains committed to protecting some of our most precious natural resources—our rivers and streams. IRR is working to engage individuals, organizations, communities, and government leaders in river awareness, responsibility, and enjoyment in an effort to improve and enhance the condition of Iowa waterways—ensuring a quality, safe, and lasting resource for future generations. This presentation will provide an overview about the organization's efforts to raise awareness about problems, solutions, and benefits of Iowa's rivers.

YOU COULD OWN IT!

ROOM 123E: MIKE SCHOVILLE

Where will you be in 5, 10, or 15 years? Many people focus on having a good job with upward mobility at a successful company. A few think about owning and managing a company. How is that done? What is the process? What are the risks and opportunities? How are existing businesses priced? What about start-ups? This session will address all of these questions.

TRAVELING ABROAD

ROOM 223E: MIKE DELANEY, JAN LAVILLE, DARLENE LAWLER, & DON WIRTH

The panel, consisting of four people who have led groups within the United States and abroad, will discuss the value of traveling to learn. Travel, whether it is a two-week trip or a semester abroad, gives participants a first-hand look at other cultures and, in turn, reveals our own culture. Besides the eye-opening aesthetic and world-view experiences, travel may also serve practical purposes such as helping to learn a language or enhance a resumé. Join the panel as it explores just a few of those possibilities.

Innovating since 1893

Sometimes the most innovative thing we can do is keep doing the right things.

At West Bank, we've spent more than a century building strong relationships one handshake at a time. With each handshake an innovative new business or family venture is launched. We're proud to play a role in each new dream, just like we did back in 1893.

WEST DES MOINES AD WILL BE PLACED HERE





LEVAR BURTON

ACTOR, DIRECTOR, & EDUCATOR

MAIN STAGE | THURSDAY, MARCH 5 | 1:30PM

Passions and the Lessons Learned

LeVar Burton has been capturing the admiring attention of both audiences and his industry peers for three decades and continues to enjoy longevity truly rare within the industry. Launching his acting career in the groundbreaking role of Kunta Kinte in the landmark television series *ROOTS*, Burton found himself on the cover of *TIME Magazine* at the age of 19. Shortly thereafter, Burton achieved further global acclaim as Chief Engineer Geordi LaForge in *Star Trek: The Next Generation* TV series and feature films.

From 1983 until 2009, Burton was the host and producer of the beloved Peabody Award-winning PBS children's series, *Reading Rainbow*. Burton has recently reimagined *Reading Rainbow* through his company RRRKidz and its award-winning mobile library. The all-new *Reading Rainbow* APP is the number-one educational app on iTunes and delivers hundreds of quality books and video field trips. Coming from a family of educators and as a result of his work on *Reading Rainbow*, Burton speaks passionately on the topics of children's literacy, has been a keynote speaker at South by Southwest (SXSW), and received the Eliot-Pearson Award for Excellence in Children's Media from Tufts University. Also the honored recipient of 12 Emmy Awards, a Grammy, and 5 NAACP awards, Burton has demonstrated in his career that he can do it all, whether acting, directing, producing, or educating.



DR. SARA SEAGER

PLANETARY SCIENTIST & ASTROPHYSICIST

MAIN STAGE | THURSDAY, MARCH 5 | 11:30AM

The Search for Earth 2.0

Dr. Sara Seager is a planetary scientist and astrophysicist at the Massachusetts Institute of Technology. She has been a pioneer in the vast and unknown world of exoplanets, planets that orbit stars other than the sun. Her ground breaking research ranges from the detection of exoplanet atmospheres to innovative theories about life on other worlds to the development of novel space mission concepts. Dubbed an "astronomical Indiana Jones," she is on a quest after the field's Holy Grail, the discovery of a true Earth twin.

Before joining MIT in 2007, Dr. Seager spent four years on the senior research staff at the Carnegie Institution of Washington preceded by three years at the Institute for Advanced Study in Princeton, NJ. Her doctorate is from Harvard University. Dr. Seager is on the advisory board for Planetary Resources. Dr. Seager is a 2013 MacArthur Fellow, the 2012 recipient of the Raymond and Beverly Sackler Prize in the Physical Sciences, and the 2007 recipient of the American Astronomical Society's Helen B. Warner Prize. She has been recognized in the media, most recently in *Nature's* Top Ten in 2011, and *TIME Magazine's* 25 Most Influential in Space in 2012, and is now the Class of 1941 Professor of Planetary Science.



HUGH HERR

BIONICS ENGINEER & ROCK CLIMBER

MAIN STAGE | WEDNESDAY, MARCH 4 | 1:30PM

The New World of Human Bionics

Dr. Hugh Herr, head of the biomechatronics research group at the MIT Media Lab, is creating bionic limbs that emulate the function of natural limbs. In 2011, *TIME Magazine* coined Herr the “Leader of the Bionic Age” because of his revolutionary work in the emerging field of biomechatronics—technology that marries human physiology with electromechanics. A double amputee himself, he is responsible for breakthrough advances in bionic limbs that provide greater mobility and new hope to those with physical disabilities. Herr’s research group has developed gait-adaptive knee prostheses for transfemoral amputees and variable impedance ankle-foot exoskeletons for patients suffering from drop foot, a gait pathology caused by stroke, cerebral palsy, or multiple sclerosis. He has also designed his own bionic legs, and the world’s first bionic foot and calf system called the BiOM.

Herr is the author and co-author of more than 80 peer-reviewed manuscripts and patents, chronicling the science and technology behind his many innovations. The computer-controlled knee was named one of *TIME Magazine*’s Top Ten Inventions in 2004; the robotic ankle-foot prosthesis, which mimics the action of a biological ankle and, for the first time, provides transtibial amputees with a natural gait, was named to the same list in 2007. Also in 2007, Herr was presented with the 13th annual Heinz Award for Technology, the Economy and Employment. Herr’s story has been told in the biography *Second Ascent, The Story of Hugh Herr*; a 2002 National Geographic film, *Ascent: The Story of Hugh Herr*; and in 2013 was featured in CNN, *The Economist*, *Discover*, and *Nature*.



DR. DAVID GALLO

OCEANOGRAPHER & EXPLORER

MAIN STAGE | THURSDAY, MARCH 5 | 10:00AM

Deep Sea-Deep Secrets: Exploring Neptune World

Dr. David Gallo is an American oceanographer and Director of Special Projects at the Woods Hole Oceanographic Institution—a preeminent, globally recognized scientific laboratory. For more than 25 years, Gallo has been at the forefront of ocean exploration, participating in and being witness to the development of new technologies and scientific discoveries that shape our view of planet earth. He has been described by TED Conferences as “an enthusiastic ambassador between the sea and those of us on dry land.” With nearly 11 million views, his TED presentation “Underwater Astonishments” is among the top-10 TED Talks viewed to date.

Gallo received bachelor of science and master of science degrees in geology from the State University of New York at Albany and a Ph.D. in oceanography from the University of Rhode Island. In 1987, he joined Robert Ballard’s team at Woods Hole Oceanographic Institution as Assistant Director of the Center for Marine Exploration.

Gallo has participated in expeditions to all of the world’s oceans and was one of the first scientists to use a combination of robots and submarines to explore the deep seafloor. He co-led an expedition to create the first detailed and comprehensive map of the RMS Titanic. He co-led the successful U.S. effort to locate the wreckage site of Air France flight 447 and is presently involved in the search for missing Malaysia Air flight 370.

Dr. Gallo remains active in encouraging the development of new technologies for ocean exploration. He is a member of James Cameron’s Deep Ocean Task Force and a member of the XPrize Ocean Advisory Board. He is a participant in the Aspen Challenge (with the Aspen Institute and Bezos Family Foundation) and a proud member of the United States Nifty Fifty Scientists and Engineers.

He has given more than 15 TED and TEDx presentations and has appeared in numerous documentaries (Discovery Channel, History Channel, National Geographic). He has also been featured on numerous televised news programs (Weather Channel, PBS *Need to Know*, MSNBC *Ed Show*, NBC *Today Show*, and *Face the Nation*). He is currently a CNN analyst regarding missing airliner Mp70 and is regularly featured on *Anderson Cooper 360*.



DR. NIALL MCCANN

BIOLOGIST, ADVENTURER, EXPLORER, AND CONSERVATIONIST

MAIN STAGE | WEDNESDAY, MARCH 4 | 11:30AM

Life on the Conservation Frontline

Dr. Niall McCann was born in Victoria, Canada, into a family of adventurers and grew up in Shrewsbury, in England's most rural county: Shropshire. Dr. McCann studied zoology at the University of Bristol and is currently completing a Ph.D. at Cardiff University, studying Baird's tapir, the largest mammal in the eotropics and one of the most threatened species in all of the Americas.

Dr. McCann has dedicated his life to seeking out adventure in the natural world, either in combination with his zoological studies, or on stand-alone adventures. He has spent two years on expeditions on six continents.

Dr. McCann's first major expedition came in 2000, when, at the age of 18, he spent one month cycling in the Himalayas with his father and a friend, crossing the Khunjerab Pass, the highest paved pass in the world. Dr. Niall has since cycled the highest road in the world, canoed the River Yukon, mountaineering in the Alps, and rock climbs in Europe and USA.

In 2007, Dr. McCann rowed across the Atlantic Ocean from La Gomera in the Canary Islands to Antigua in the Caribbean. This expedition was followed, in 2009, by a successful attempt to manhaul on skis across Greenland. Dr. McCann was due to guide an expedition to the Magnetic North Pole in 2011, which was aborted—along with all other expeditions in the region—due to dangerously thin sea ice conditions.

In his career as a zoologist, Dr. McCann specialized working with endangered species and conducted zoological research in the U.K., Italy, Mauritius, Bolivia, Namibia, Guyana, and Honduras, spending more than 21 months living and working in remote and challenging parts of the world. As well as his involvement in research, Dr. McCann is actively engaged in ongoing conservation projects in Honduras, Nepal, and Guyana.

Dr. McCann made his television debut in 2011 with the PBS documentary *Lost in the Amazon: The Enigma of Col Fawcett*, which aired on the History Channel in the U.K. As a result of the success of this documentary, which won two international awards, Dr. McCann landed a six-part wildlife adventure series, *Biggest and Baddest* with the Discovery Channel.



CASSIE LEE

ENGINEER—DREAM CHASER

MAIN STAGE | WEDNESDAY, MARCH 4 | 6:00PM

The Future of U.S. Manned Space Flight

Cassie Klobberdanz Lee is currently the Manager of Business Development for Sierra Nevada Corporation's Dream Chaser® Space System. In this capacity, Lee facilitates domestic and international relations for strategic teaming and advanced development opportunities for the Dream Chaser orbital vehicle, a vehicle that will return human spaceflight capability to the United States. The Dream Chaser is capable of crewed and uncrewed flight to low Earth orbit including the transportation of astronauts to and from the International Space Station. The Dream Chaser will also offer flight opportunities for microgravity science experiments, satellite servicing, and orbital observation.

Prior to her role in business development, Lee served as one of Sierra Nevada Corporation's first engineers on the Dream Chaser program as well as the program's lead for public and media relations. She is a lecturer at the University of Colorado at Boulder in Aerospace Sciences and developed a graduate course in technical communications for Aerospace engineers and space scientists. Her professional experience includes roles in mechanical and aerospace engineering as well as published works on technical and crisis communications. Formerly head of external relations at SpaceX, Cassie began her career as an engineer with positions at NASA's Marshall Space Flight Center and Kennedy Space Center. She holds an M.A. from the University of Colorado and a B.S. from the University of Iowa. She is a native of West Des Moines, Iowa.



CLAYTON ANDERSON

SPACE SHUTTLE & ISS ASTRONAUT

MAIN STAGE | WEDNESDAY, MARCH 4 | 6:00PM

The Future of U.S. Manned Space Flight

Clayton Anderson is simply out of this world! Recently retired after a stellar 30-year career with NASA, Anderson accumulated 167 days in space while living onboard the International Space Station for more than five months in 2007 and served as a Mission Specialist with the Space Shuttle 131 crew in 2010.

A seasoned spacewalker, Anderson spent nearly 40 hours in the unforgiving vacuum of space, having helped build the space station through the execution of six spacewalks, placing him 27th on the list of cumulative spacewalk world records. Clayton's remarkable career has been chronicled in a documentary by Nebraska Educational Television (NET) entitled *Homemade Astronaut*. He has appeared on the History Channel with Larry the Cable Guy in *Only in America*, and the Travel Channel with Kevin Connolly in *Armed and Ready* and Don Wildman in *Off Limits*.



DR. ANTHONY PAUSTIAN

EDUCATOR, AUTHOR, & DESIGNER

MAIN STAGE | WEDNESDAY, MARCH 4 | 10:00AM

Lawn Jarts, Twinkies, and a Guy Named Jim

Fifteen years ago, Dr. Anthony Paustian was given a rare opportunity in life...to develop and create a technology-focused college campus from scratch. Since then the campus and its innovative advances in technology-based instruction have appeared on *CNN*, *CNBC*, *Wired*, *USA Today*, *NPR* and other national media and won numerous awards for leadership in innovation including being featured on the InfoWorld 100 List (#51) of the nation's most innovative organizations. In 2006, Dr. Paustian created the Celebrate! Innovation Exhibition, a new type of campus-learning environment where students are surrounded by the stories of great innovators through larger-than-life visuals, technology-focused exhibits, and through an annual Celebrate! Innovation Week (ciWeek) where the people behind the stories come from all over the world to tell those stories firsthand. The Celebrate! Innovation Exhibition is currently on the Iowa Department of Tourism's list of places to visit.

From his Air Force days on F-111s to building national brands to leading a talented group of educators, Dr. Paustian developed a unique skill set that is quickly apparent in every aspect of his life as a leader, educator, entrepreneur, inventor, designer, author, and speaker.

Dr. Paustian has written a number of books including *Imagine!* (©1997 Simon & Schuster) and *Bridging the Gap* (©2002 Paradigm Publishing). His most recent book, *Beware the Purple People Eaters: A Personal Look at Leadership*, takes much of his life experience and applies it as a metaphor to encourage readers to take a long, hard look at themselves and improve how they choose to lead each day of their lives.

Dr. Paustian holds graduate degrees in educational psychology, business administration, and design and is the proud father of two Army soldiers.



DANNY BEYER

NETWORKING NINJA, SPEAKER, & AUTHOR

MAIN STAGE | MONDAY, MARCH 2 | 6:00PM

Networking & Innovation: How a Cup of Coffee Can Change the World

Danny Beyer is a networking specialist and bow-tie aficionado. Through his network, he achieved success in both his professional and personal lives. He helped organize the Des Moines Area LinkedIn Social—an event that draws hundreds of professionals from throughout the Greater Des Moines area to build real-life connections. In 2013, he co-founded the Bow Tie Ball, a charity event centered on bow ties and networking that has raised over \$20,000 for Young Variety. His book, *Ties that Bind: Networking with Style* is due out in early 2015.

Beyer is a keynote speaker on networking and building real connections and frequently blogs on those topics for the Des Moines *Business Record*. In 2013, he was chosen as the Amy Jennings Young Professional of the Year through the Greater Des Moines Partnership's Young Professionals Connection and was selected to the 2014 *Business Record* 40 Under 40 group.



TOM EAKIN

AUTHOR & SPEAKER

MAIN STAGE | TUESDAY, MARCH 3 | 6:00PM

Finding Success Takes a Tenacious Failure

Tom Eakin is the founder of BoomLife, an organization that helps people achieve values-driven success, and author of *Finding Success: Get What You Really Want*. Through his writing, workshops, and inspirational speaking, Eakin helps people find and expand the sweet spot between what they value, what they're good at, and what their situation requires, so they can exceed even their own expectations. Eakin is a former U.S. Army Ranger-qualified Combat Engineer officer with a master's degree in business administration and master's certificate in executive coaching from Bellevue University and has created stellar performance in teams in a wide range of environments. Originally from the Adirondack Mountains of Upstate New York, Eakin lives in Jefferson, South Dakota, near his three children and with his wife, Julie. He is an active and passionate advocate for veterans and entrepreneurs in his community and region.



EDINA NAPRELJAC

WEDNESDAY, MARCH 4 | 8:45AM-9:45AM > AUDITORIUM

Ignite The Power Within

Edina Napreljac was born in Bosnia and is a survivor of the 1992 genocide. Her family immigrated to the United States in 1994. She has a degree in liberal arts from DMACC and a business management degree from Drake University. With more 13 years of business experience, she serves as a personal and a professional guide through her own company: Universal Intelligence Consulting, LLC.



KIRK M. HARTUNG

WEDNESDAY, MARCH 4 | 8:45AM-9:45AM > ROOM 121E

Iowa Inventions That Changed the World

Kirk M. Hartung is a patent attorney practicing in Des Moines with McKee, Voorhees & Sease, an intellectual property boutique law firm with 18 lawyers. With more than 30 years of experience, Hartung advises inventors on the options for protecting their innovations and ideas. Hartung evaluates patentability, writes patent applications, prosecutes in the U.S. and foreign patent offices, negotiates and litigates patent disputes, and secures licensing and transfers of patent rights. His engineering and law degrees provide the technical and legal backgrounds to assist clients in their intellectual property matters.



JESSIE LOWRY

WEDNESDAY, MARCH 4 | 8:45AM-9:45AM > ROOM 219E

Window to the Wild

Jessie Lowry is a wildlife conservationist who has studied primates in the rainforests of Costa Rica and Uganda and cared for many species of zoo animals, from sea lions to snakes. Through her role at Blank Park Zoo in Des Moines, she raises funds and awareness for more than 50 wildlife organizations, develops creative events and fundraisers, and mentors others on how to channel their passions. The founder and leader of the pollinator conservation initiative: Plant.Grow.Fly., she also serves as a Steering Committee member for Zoos and Aquariums Committing to Conservation (ZACC).



JENNIFER COLEMAN

WEDNESDAY, MARCH 4 | 8:45AM-9:45AM > ROOM 212W

Passion As Art, Art As Business

A DMACC alumnus, Jennifer Coleman is a freelance photographer specializing in motor sport, commercial, and lifestyle photography, who has also taught photography classes. She currently serves as chief photographer for the Iowa Speedway.



KRISTIN RUNYAN

THURSDAY, MARCH 5 | 8:45AM-9:45AM > AUDITORIUM

Life Problems Solved with Agile

Kristin Runyan is a product delivery expert currently living in Des Moines, Iowa, focusing on Agile implementations as an Agile coach and trainer. She co-authored a textbook on the Agile methodologies, targeted at undergraduate computer science, software engineering, and business students, published in 2014. During her tenure at CDS Global, Runyan served as a chief product officer, chief information officer, and several other roles within technology and product management, and her team launched six new products in less than three years. Runyan was the 2011 recipient of the Women of Innovation award from the Technology Association of Iowa. Runyan earned her undergraduate degree at Texas Christian University (TCU) and her MBA at Saint Louis University (SLU). She is an avid blogger at runyanconsulting.com, and her Twitter handle is @KristinRunyan



LAUREN RICE, MARC DICKINSON, & MATT ALBERHASKY

WEDNESDAY, MARCH 5 | 8:45AM-9:45AM > ROOM 223E

Writing Panel

Lauren Rice teaches writing, creative writing, and literature at the Newton Campus. Her MFA from the University of New Orleans focused on creative nonfiction, but these days she mainly writes really bad poetry. Many of her colleagues and students are jealous of the standing desk in her office.

Professor Matt Alberhasky teaches writing, literature, and film at DMACC Urban Campus. He holds a Master's degree in Literature from Iowa State University. He has published three stories in online literary journals and is currently working on a novel.

Marc Dickinson's work has appeared in the *Shenandoah*, *Cream City Review*, *North American Review*, *Beloit Fiction Journal*, *The MacGuffin*, *Saranac Review*, *South Dakota Review*, *Coal City Review*, as well as other journals. He won *American Literary Review's* 2011 Fiction Contest and has been nominated for a Pushcart Prize on several occasions. He received his MFA from Colorado State University and currently teaches creative writing at Des Moines Area Community College.



TOM HENDRICKSEN

WEDNESDAY, MARCH 5 | 8:45AM-9:45AM > ROOM 123E

Breaking The Career Code

Tom Hendricksen lives in West Des Moines, Iowa. For the past fifteen years, Information Technology has been both his career and hobby. He currently works as a Development Services Manager at Zirous. Hendricksen also is a career coach, author and speaker at MyITCareerCoach.com. Hendricksen helps people find a career path they find rewarding and enjoyable.



SHAWN FITZGERALD

THURSDAY, MARCH 6 | 8:45AM-9:45AM > ROOM 212W

Every Pixel Builds A Story

Shawn FitzGerald loves telling stories of all magnitudes. So, it's no surprise that he gravitates toward using technology and digital means to further the art of storytelling. Building on 20 years of writing, directing, and editing video, FitzGerald continues to produce visual communication for private- and public-sector organizations. He also consults with and provides training for companies looking to improve communication with employees and customers.



ROZ LEHMAN

WEDNESDAY, MARCH 5 | 8:45AM-9:45AM > ROOM 219E

Iowa Rivers Revival—The Voice For Iowa's Rivers

As executive director for Iowa Rivers Revival (IRR) since 2007, Roz Lehman has a background in community and policy organizing, and she graduated from Drake University with a BA in sociology. In her current role, she is helping develop a statewide network of river leaders and supporters committed to the protection, restoration, and enhancement of Iowa's rivers and streams through advocacy and education.



MIKE SCHOVILLE

THURSDAY, MARCH 5 | 8:45AM-9:45AM > ROOM 123E

You Could Own It!

Mike Schoville is the President of The Business Brokers, Inc. (TBBI) located in Grimes, IA. TBBI assists motivated business owners without a succession plan to quietly and confidentially market their business to qualified buyers. Prior to this present role, Schoville served as CEO of a publicly-traded manufacturing company that was sold, and he also retired from a Fortune 100 company, where he spent much of his time working with various dealer organizations. Mike has a BBA from the University of Iowa and an MBA from St. Ambrose University.

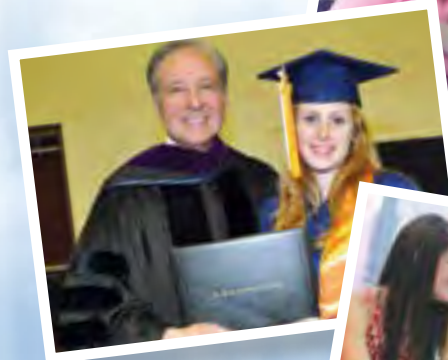
*Of all the gifts
that can be given,
the gift of education
is perhaps the greatest.*



The Des Moines Area Community College Foundation ensures educational excellence through charitable giving. Our vision is to provide every student access to a quality education to pursue opportunities and achieve career dreams.

2014 DMACC FOUNDATION HIGHLIGHTS

- ▶ Provided \$725,000 in scholarships to DMACC students.
- ▶ Hosted 300 donors, scholarship recipients and friends at the fourth annual scholarship "thank you" celebration.
- ▶ Raised \$208,000 for scholarships through the annual DMACC CEO Golf Invitational.
- ▶ Launched the DMACC Foundation Entrepreneurship Competition, awarding a \$10,000 cash prize to JPZ Products to produce the Rescue Auger
- ▶ Through the generous support of our donors, created 24 new scholarships to support DMACC students



The DMACC Foundation supports the college in areas that are not sustained by taxes, tuition or grants.

Learn how you can make the dream of a College education possible.
www.DMACC.edu/Foundation

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www.dmacc.edu

800-362-2127
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