CALIFORNIA

FREEMASON

Jun/Jul 2010

Are We Alone?

Jim Nickerson explores deep space and asks the (really) big questions

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Congratulations to Forrest Bird,
California's Mason of the Year

Scientist, inventor, aviator
Mason since 1957
Palm Springs Lodge No. 693

He's been called "a remarkable American original." He has the singular privilege of having met Henry Ford, Orville Wright, and Howard Hughes. And odds are, his invention has saved the life of someone you know. Meet California's Mason of the Year and his wife, Pamela.

2008 National Medal of Technology and Innovation
2008 Presidential Citizens Medal

His Bird respirator, introduced to the market in 1956, was the world's first reliable, mass-produced medical respirator. A pediatric version reduced infant mortality in low birth weight babies by 60 percent. Over the years, he has continued to improve upon these devices and create new ones.

Grand Master Nagel will present the Mason of the Year award at the 161st Annual Communication during the Grand Master's Banquet.

Forrest Bird's work as a scientist and inventor has saved the lives of millions.

web extra

Click here to check out the "60 Minutes" video and article, "Forrest Bird, The Birdman of Idaho," on cbsnews.com.

Masons of California

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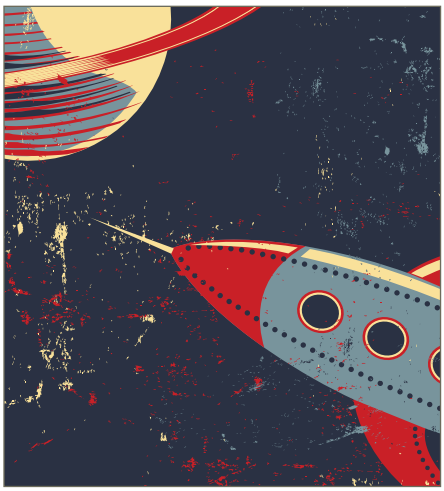

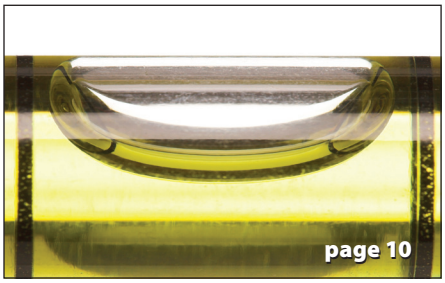

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Are We Alone?

Jim Nickerson does not have your average day job. As part of NASA's Kepler Mission, he and his team are on a deep-space search for habitable planets, and the potential outcome could rock humanity to its core. But Nickerson's feet are firmly planted on Earth. His Masonic experience and personal beliefs converge with one basic truth: We're all in this together.

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web extra

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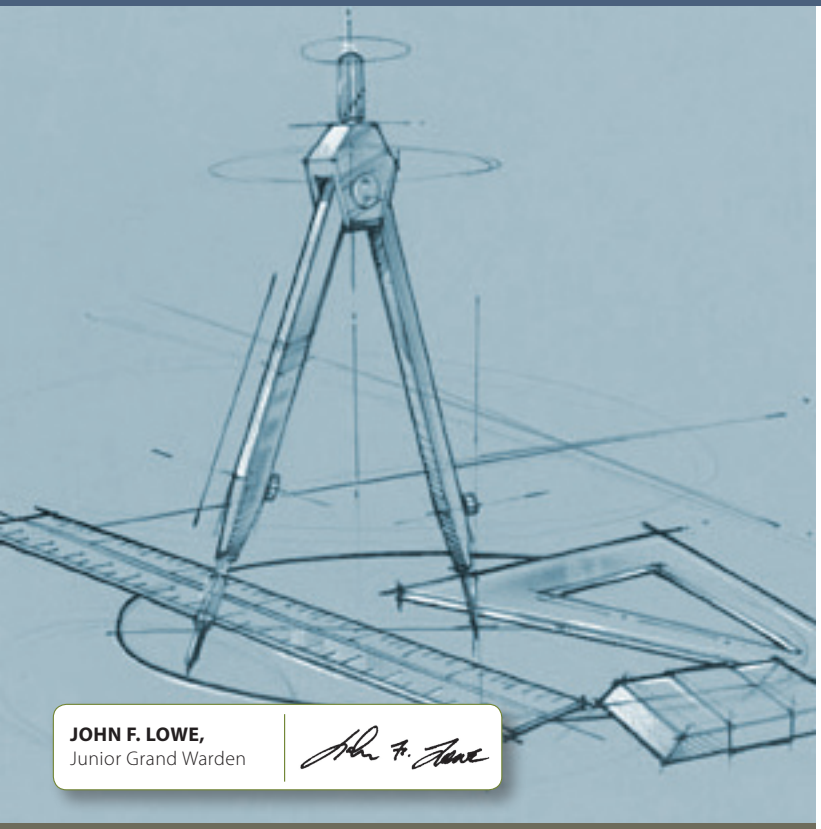


JOHN F. LOWE,
Junior Grand Warden

The Science of a Mason

It should come as no surprise that in this issue we celebrate the centuries-old connection between Freemasonry and science.

The ancient guild of Freemasons learned from the earliest time the principles of geometry, mathematics, and other knowledge that *today* is recognized under the broad heading of science.

Historically, the first science might be that of the engineer, from the Old French *engignier*, meaning "to contrive." While military engineers built weapons of war, or marked out grounds for encampment, civil engineers built roads, canals, bridges, castles, and cathedrals. Our operative brethren were indeed using engineering principles to build cathedrals hundreds of years before the first civil engineering school, The National School of Bridges and Highways, was founded in Paris in 1747.

Yet when our craft began its transition from operative to speculative, the bond with science – and more importantly, scientists – was strongly avowed as lodges in Scotland began admitting gentlemen interested in mathematics and other scientific knowledge of the day.

Sir Robert Moray thus began his Masonic journey in 1641 as an "accepted" member of the Lodge of Edinburgh. Others followed, finding lodges as the only welcome place to discuss scientific theories without prejudice, or even reprisal by authorities. Soon the scientists were meeting as a group desirous of advancing scientific principles based upon observation and research.

As England entered the period known as the Enlightenment, Brother Moray utilized his relationship with King Charles to gain a royal charter to the group of scientists, including accepted Freemasons, now known as the Royal Society. (More about this on page 18, "Friends of the Royal Society.") For the next 200 years, the society was strongly populated by scientist Freemasons. Our brother Benjamin Franklin, surely a man of scientific curiosity, was a member.

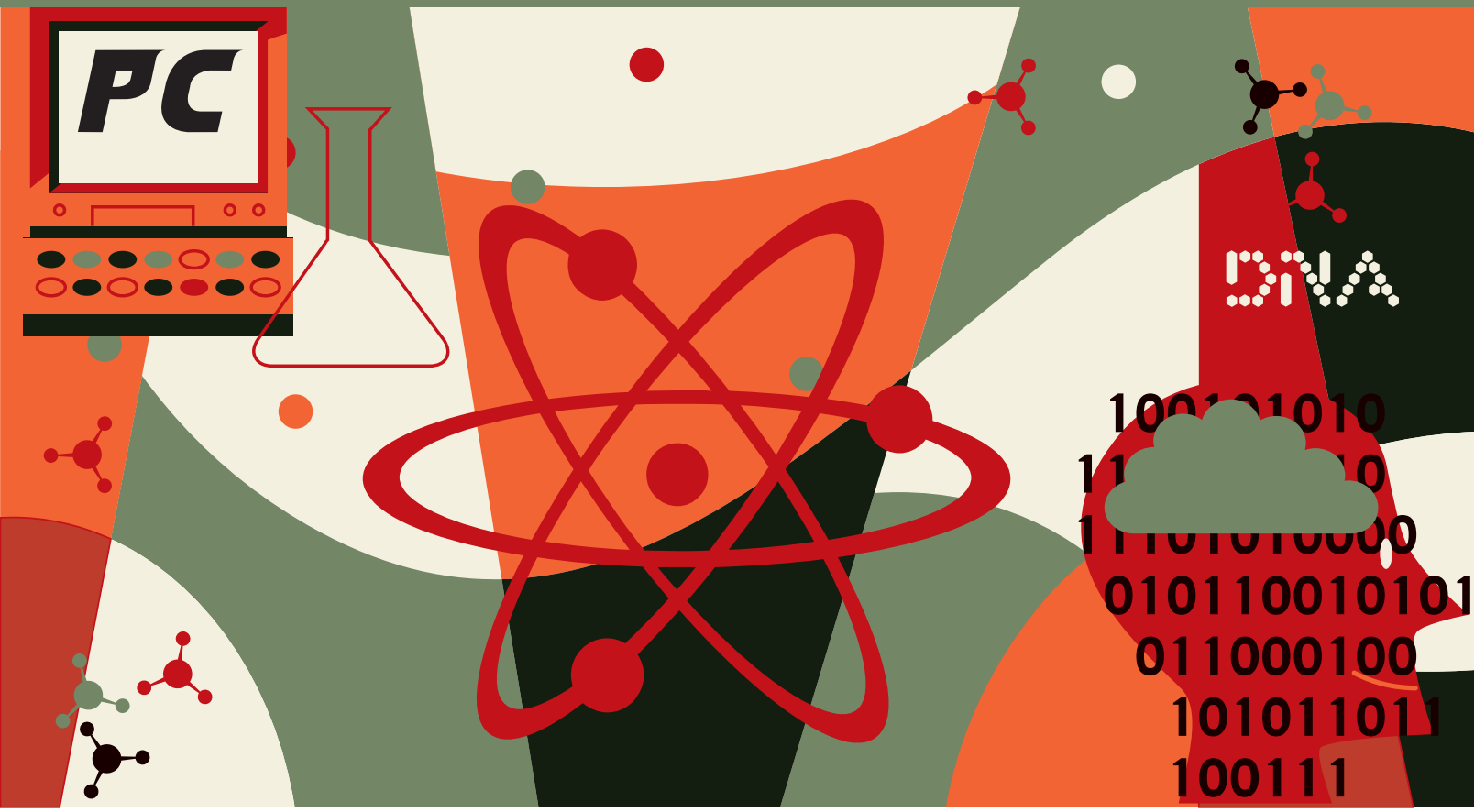
> *"There is something fascinating about science. One gets such wholesale returns of conjecture out of such trifling investment of fact."* —Brother Samuel Clements

As Freemasonry took root in the American Colonies, early scientific minds no doubt found our craft a fit within their own values of logic, reason, and the search for truth. Similar to the experience in Europe, they found in Masonic lodges a venue to speak freely, to discuss with like minds geometry and mathematic principles, and to search for further light, whether physical or allegorical.

We speak with pride of our brethren involved in forming this great experiment we know as the United States. We should be just as enthusiastically proud that some of the greatest research and invention during the past 200 years has been accomplished by scientist Freemasons in a free United States.

Yet during the span of years since Sir Robert Moray took his obligation, Masonic lodges the world over have been practicing a very special science – a *practical* science: the science of making a man a Mason. It is unique, learned only from mouth to ear, and held precious from generation to generation. We utilize symbols from a number of sciences to illustrate the timeless truths, morals, and responsibilities to civil society of all those who wear the badge of a Mason.

Enjoy reading in this issue about just a few of our brethren who practice science, be it as a vocation or an avocation, but nonetheless as a calling. And ask yourself, "Am I a scientist? Am I practicing the science of a Mason?" The answer is in your heart.



In the Name of Science

by Heather Boerner

Three California brothers, in three very different fields, share a life's passion

Everyone knows California is the birthplace of Hewlett Packard and all things iPhone. But the region's science isn't limited to technology. Indeed, in a state brimming with natural resources, technological know-how, and big thinkers, we excel in all disciplines of science.

Masons have been part of all of it. Here are three brothers who've made a lasting contribution to their scientific fields.

The Time Traveler

As a child, Brian Ludwig spent summers traveling the East Coast with his history-buff parents, visiting the preserved encampments of the first European settler to the Americas and wondering what it would be like if he were a boy growing up at that time.

Continued on next page

Today, you're likely to find Ludwig, senior warden at Placerville Lodge No. 26, coming up with the answers. He's an archaeologist and works in a field that uses nuclear physics and geology, among other disciplines, to piece together the lives of people who lived hundreds and sometimes thousands of years ago.

"Archaeologists are storytellers, and we put those stories together based on scientific information excavated from each site," says Ludwig, who has been an archaeologist for 30 years. His work has taken him from handling the 2 million-year-old tools of East Africa's earliest human ancestors to excavating the graves of free and enslaved Africans and British prisoners-of-war in downtown New York City to exhuming and studying the history of Native Americans along the river banks of the Sacramento Valley.

What he's learned is that the bones tell all: Through carbon dating, soil analysis, and other means, he can determine the age, sex, and sometimes the social status of each body he uncovers, as well as what diseases they had during their lifetime, where they came from, and what they did for a living.

> "We Masons have a deep history. And the ethics of my field match well with the ethics of the fraternity."

But that's not all. By examining a civilization's tools, and where the materials they're made up of come from, he can discover how far people traveled, who they traded with, and even how their societies functioned. During a recent job in the Sacramento Valley, Ludwig stood shoulder-to-shoulder with a Native American representative who was responsible for ensuring that his ancestors' bones were handled sensitively. It was the earliest-known prehistoric site in the Central Valley by 2,500 years.

It's this love of history and respect for his fellow man that makes work and Masonry compatible.

"If there were ever a philosophical and philanthropic organization suited for archaeologists, it's Masonry," he says. "We Masons have a deep history. And the ethics of my field match well with the ethics of the fraternity. In both, we try to deal with people one-on-one and respect their viewpoints. We don't need to agree but we have to be respectful."

Brian Ludwig's work spans millennia, and the globe - from Gold Rush mining camps in the Sierra foothills to the earliest traces of "human" technology, found in Tanzania.

The Mastermind

Sonny Stormes wrote his first computer program on a TRS-80 at age four and never looked back. And while his programming skills have improved dramatically in the interim 28 years, his love of information technology and the science behind it has stayed constant.

"I'm one of those guys who can sit with a tech manual, read it cover to cover, and enjoy it," says Stormes, junior warden at Sacramento Lodge No. 40.

Stormes now designs, builds, and programs computer systems that help his real estate services firm, Clear Capital, predict and monitor real estate markets nationwide. The system he designed, called a "Beowulf cluster," links 25 computers that run as one large super-computer. In one day, the super-computer does what once took a single computer three weeks.

The super-computer takes raw appraisal data and uses a complex algorithm to help analysts understand whether a particular real estate market is declining or growing.

With the help of a dolphin named Nemo, Randy Brill proved a theory about echolocation during his time at the Chicago Zoological Society, 1975-1989. In this picture from the same period, he poses poolside with another colleague, Shana.

To design it, Stormes drew on his expertise in computer networking, LINUX programming, and storage engineering.

Then, he wrote a program so analysts can use it without understanding any of those things.

And while Stormes, in turn, admits that he understands very little about real estate, he does understand that his work allows his company to process information faster, understand it better, and make more accurate predictions about the market.

Stormes' desire to learn and grow keeps him fascinated with the ever-changing field of technology. It's also what drew him to Masonry.

"One of the things I love about Freemasonry is the thirst for knowledge and the constant development of yourself in the aspects of being a good man," he says. "It's morality and truth."

The Dolphin Whisperer

If someone told Randy Brill in 1975 that he'd end up training and studying dolphins for 34 years, he wouldn't have believed it. At the time, his only experience with animals was in high school, when he led obedience training for German shepherds.

But he made a career out of it. Along the way, he confirmed a theory about how dolphins echolocate – and helped Navy engineers build better sonar.

"It wasn't a life goal, but it became a life's passion," says Brill, a past master of San Diego Lodge No. 35 and general secretary of the Scottish Rite there.

It all began with an Amazon River dolphin and Brill's project for his master's degree in psychology. He wanted to work on a large-brained mammal, but wasn't keen on primates. Soon, he found himself using his behavioral psychology expertise to train bottlenose dolphins at the Brookfield Zoo near Chicago. Then he began a doctoral program in experimental psychology and started work on his mentor's theory that dolphins "hear" through their lower jaws.

Dolphins find their way and locate objects in space by emitting high-pitched signals and waiting to hear how those sounds bounce back to them. But dolphins don't have external ears.

So Brill set about testing the theory that dolphins "hear" by absorbing sound waves through their hollow, fat-filled lower jaws. He blindfolded a dolphin, Nemo, with soft rubber suction cups, then measured the dolphin's ability to discriminate between targets with two different hoods over the lower jaw – one that blocked sound waves, one that didn't. Nemo was 90 percent accurate with the hood that allowed sound to pass through to his lower jaw. But he could only guess when his jaw was covered by the hood that blocked sound.

Brill's study changed the debate about echolocation. It also drew the attention of the U.S. Navy. The Navy's engineers wanted to improve their sonar, and Brill came on board to test the engineers' theories.

"The question when I got there was, 'Could we build a system to literally replace the animal's natural abilities?'" he says. "We're not there yet, but we're getting closer."

That optimism and determination is what makes Brill tick – as a scientist and a Mason.

"The two statements I never like to hear are, 'We did it once and it didn't work,' and 'You can't do that, it's not possible,'" says Brill. "Well, we proved it is."

Brill concludes, "That's the most salient connection between my work and Masonry: to approach things with an open mind."

The W as You Know It

Discoveries by Masonic sci

by Cason Lane

The next time you get a flu vaccine, search the Internet, or enjoy some fast-food fries, don't forget to thank the Freemasons. For centuries, Masons around the globe have been the minds behind important scientific discoveries and breakthroughs – from life-saving medical miracles to feats of physics. Here are a few Masons who have made the world a better place through science.

THE INTERNET

Would the Internet exist without links? Thanks to American engineer Vannevar Bush, we'll never know. In 1945 Bush, a member of the Richard C. Maclaurin Lodge at the Massachusetts Institute of Technology, published a forward-looking article in "The Atlantic Monthly." In it, he detailed his vision of the Memex, a futuristic device with viewing screens and a keyboard, which could be used to store and retrieve microfilm-based information through links created by the user. Bush is credited with inspiring the development of hypertext, the electronic linking system that is the basis for today's World Wide Web.

PENICILLIN

Who knew that a moldy cantaloupe could help cure disease? In 1928, Freemason Alexander Fleming, a Scottish biologist, discovered the antibiotic properties of penicillin, which is derived from some molds. This discovery, which earned Fleming the Nobel Prize for medicine in 1945, paved the way for numerous advancements in the use of penicillin. Notably, in World War II, penicillin significantly reduced the number of deaths and amputations caused by infected wounds among Allied forces. Fleming was a member of several English lodges, including Sancta Maria Lodge No. 2682 and Misericordia Lodge No. 3286.

RADIO WAVES TO RADAR

The ionosphere is an atmospheric layer 60 miles above the Earth's crust. But before the work of physicist Edward V. Appleton, no one knew it existed. Appleton, who was a member of Isaac Newton Lodge No. 859 in Cambridge, England, proved the existence of the ionosphere by shooting radio waves up into the sky, which were reflected back. This 1924 experiment, along with Appleton's continued research in radio waves, led to the development of radar, a system of object detection

ientists have transformed everyday life

that has inspired everything from military technology to air traffic controlling. Appleton was awarded the 1947 Nobel Prize in physics.

THE PERFECT POTATO

Luther Burbank, namesake of Santa Rosa Luther Burbank Lodge No. 57, was an American botanist and horticulturist who developed more than 800 varieties of plants, including the Santa Rosa plum, the Freestone peach, the Shasta daisy, and – perhaps most notably – the Russet Burbank potato. This large, hearty tuber with brown skin and white flesh – which he began cultivating in the early 1870s – is one of the most commonly grown potatoes in the United States and is often used for french fries.

THE SPEED OF LIGHT

Ever heard of an interferometer? It's an instrument that can measure the speed of light, and it was invented by physicist Albert A. Michelson, of Washington Lodge No. 21 in New York City. In 1881, Michelson used his interferometer to determine whether light traveling in the same direction as the earth would move more slowly than light traveling at right angles to the earth's surface. His findings, which showed that light traveled at a constant speed, helped lay the groundwork for Albert Einstein's Theory of Relativity. In 1907 Michelson became the first American to receive the Nobel Prize in physics.

STANDARD TIME

As recently as the 20th century, many cities and towns around the world still relied on the sun to tell the time of day. That was until Sir Sandford Fleming, a Scottish-Canadian engineer and Freemason, proposed the idea of a standard 24-hour clock for the entire world, which would be based on the global meridian of Greenwich, England. Fleming's idea for a universal world time was accepted at the International Meridian Conference of 1884 – but it wasn't until 1918 that standard time zones were established in the United States.

VACCINES

One of the most important medical discoveries of all time is credited to a Freemason, Dr. Edward Jenner. After smallpox ravaged Europe in the 18th century, Jenner theorized that people who were exposed to cowpox, another disease of the time, were less susceptible to smallpox. Working from that theory, Jenner used matter from cowpox lesions to pioneer the smallpox vaccine, which helped eradicate the disease and paved the way for vaccinations to become an accepted medical practice. Jenner, who was a member of Faith and Friendship Lodge No. 270 in Berkeley, England, is considered the "father of immunology," the pioneer of a discovery that – according to some – has saved more lives than the work of any other man.

This article highlights a few important scientific discoveries by Masons, but there are many more. Know of another? Visit the official Facebook page for the Masons of California and click on the Discussions tab.

One of the peculiar phrases that appears in our Masonic ritual is that "Masonry is a progressive moral science."

The term *science* comes from the Latin word *scientia*, which, in turn, comes from the word *scire*, "to know." Nowadays the word is associated with a body of knowledge developed in accordance with the scientific method of inquiry; that is, by inductive reasoning based on observation of the physical world. However, when our ritual first came into existence, it had a broader meaning.

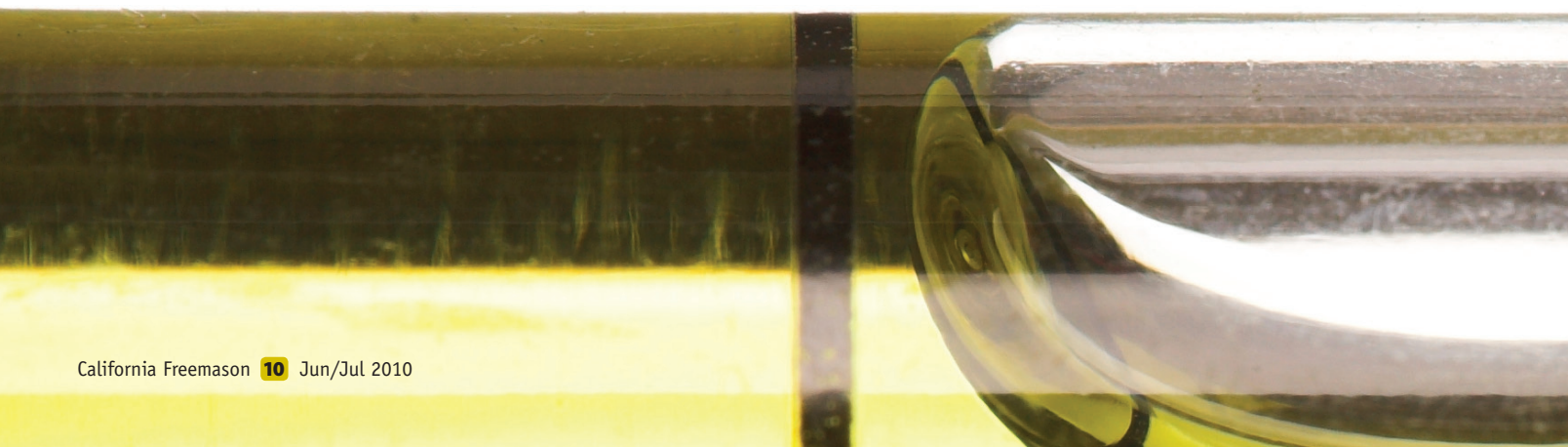
THE IMPORTANCE OF PROGRESS

The Oxford English Dictionary notes that the original meaning of *science* was "The state or fact of knowing; knowledge or cognizance of something specified or implied." It is in this sense that Freemasonry uses the term *science* to describe itself.

In the Fellow Craft degree we are reminded of the importance of making progress as a Mason. We use the term *advanced* to describe moving from being an Entered Apprentice Mason to becoming a Fellow Craft Mason, as in "Being advanced to the Second Degree of Freemasonry, I congratulate you on your preferment," the phrase in the Charge that comes just before the new Fellow Craft is told that Freemasonry is a "progressive moral science."

by John L. Cooper III, Past Grand Secretary

A PROGRESSIVE MORAL SCIEN



If Freemasonry is defined in this context as a "progressive moral science," and the Fellow Craft is expected to advance as he becomes more conversant with it, then every Mason is bound to the same obligation. If so, then we should take a closer look at what it means to pursue advancement in an organization devoted to a body of knowledge defined as a "progressive moral science."

Freemasons are expected to take a serious look at customs which may have no basis for their existence, and which may, in fact, be contrary to other and more valid ethical values, such as treating people equally regardless of social or economic status.

BOUND TO A GREATER LAW

First, morals have to do with behavior. It is not an accident that the word *morals* is associated with *mores*, meaning customs, and with *morale*.

We use the term *moral law* to describe a list of morals that members of a community are expected to observe. Some are universal, being found in almost all societies, such as laws against theft or murder. Others may be specific to a particular society at a particular time, and over time become obsolete.

An example of the latter are sumptuary laws – laws regulating the consumption of luxury goods, and often intended to preserve social class distinctions. In the Massachusetts Bay Colony in colonial times, for example, only people with a personal fortune of at least 200 pounds were allowed to wear lace – a law which was soon ignored, and eventually disappeared from history.

It is in this sense that Freemasonry describes itself as a *progressive moral science*. In other words, Freemasons are expected to take a serious look at customs which may have no basis for their existence, and which may, in fact, be contrary to other and more valid ethical values, such as treating people equally regardless of social or economic status.

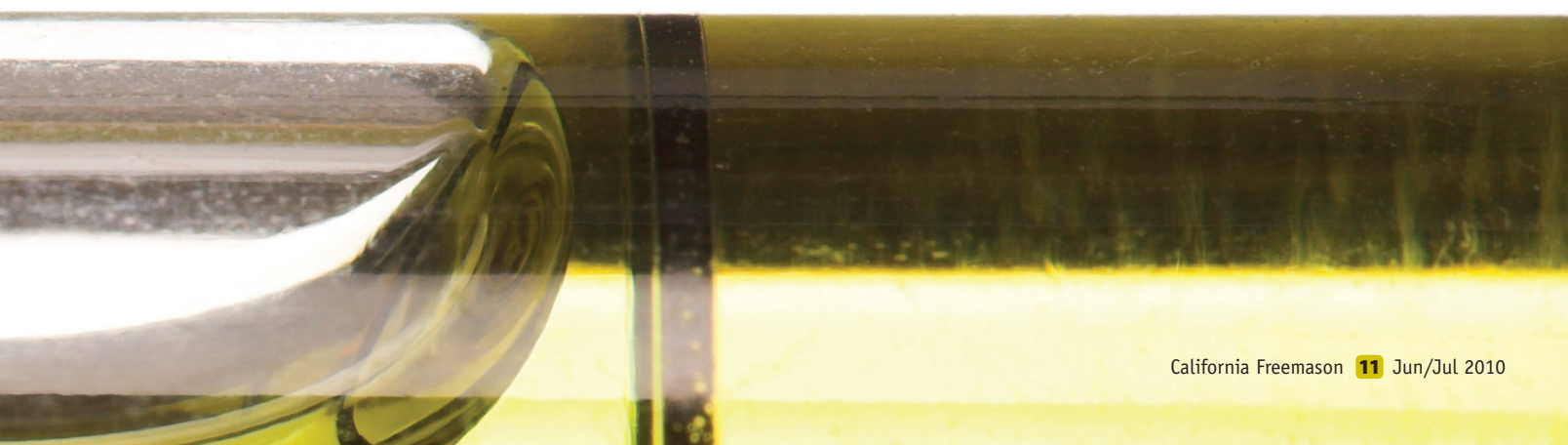
Secondly, Freemasonry acknowledges that we are bound to a greater law than mere custom. Our commitment to the concept of a Great Architect of the Universe implies that there is something more important than mere custom in defining that which is moral in the understanding of Freemasonry.

A STUDY IN MORALITY

A commitment to something above and beyond ourselves means that we are bound by much more than just our own personal ideas as to what defines *moral* and what is beyond *morality*. Our understanding of the larger picture of morality is deeply intertwined with our belief in a God who looks beyond that which is mere convenience in our own simple definition of morality.

It is this commitment that prevents us from making morality simply a play upon words, and brings us into the presence of the One that enables us to reach beyond our own simple understanding of morality into a greater understanding outside of ourselves. To understand our commitment to God is to understand our commitment to morality in a way that we could not otherwise understand.

Freemasonry is, indeed, a "science." It is a body of knowledge that enables us to approach God with a clear conscience. It is much more than a replication of customs from times past; It is a promise of the future to come. It is a "progressive science" because it is ever-evolving, and because it brings us into the presence of God, whose understanding of morality is an ever-expanding application of the greatest gift He can give: that of love for others, and a brotherhood in which all men and women are created equal.



by Laura Normand

Are We Alone?

Jim Nickerson explores deep space and asks the (really) big questions

Every day, Jim Nickerson searches the sky and asks: "Are we alone in the universe?" In his line of work, he may just find the answer. If he does, it'll redefine our existence. In the meantime, just asking the question makes his sliver of Planet Earth a much better place.

The search for life

In the 1960s television series "Star Trek," humans embarked on a fictional mission to seek out other life in strange new worlds. In that mythology, the crew reported to Earth-based Star Fleet headquarters in San Francisco.

For Brother Jim Nickerson, the real-life mission is based some 40 miles away in Mountain View.

Nickerson, a Master Mason at Burlingame Lodge No. 400, is a mission support engineer at the NASA AMES Research Center. It's a multi-mission operation center – meaning, Nickerson's on hand to assist with computer hardware and networking for whatever mission arises.

A few months ago, that involved "blowing up the moon," as the media hyped NASA's LCROSS (Lunar Crater Observation and Sensing Satellite) mission. The team launched a missile into the lunar surface, then analyzed the debris to prove that there is water on the moon – a major boon for deep space exploration.

These days, Nickerson's work is devoted to the Kepler Mission, searching distant stars for Earth-like planets. The mission has already discovered five gas giants like Jupiter. It has the potential to identify hundreds of Earth-like planets in the Milky Way alone, and answer whether or not they might sustain life – whether it's life like ours, or life like we haven't yet imagined.

A speck in the sky

Nickerson is a self-described geek, a label he wears with pride. But when his explanations trail off into ionospheres and other four-syllable words, he checks himself. To explain the challenges of the Kepler Mission, he uses this analogy: "Imagine a plant. On one leaf, imagine an ant. Then imagine a speck of dust on the ant. The whole thing is moving. And we're trying to take a picture of the speck of dust."

A special telescope monitors the brightness of some 100,000 stars in deep space. A change in brightness means that an object has passed in front a star; a recurring change means the object is actually a planet in orbit. Kepler scientists can judge the path and speed of the orbit – and from that, the size of the planet, how far it is from the star, and if life might survive there.

Continued on next page

As a computer engineer, Nickerson works intimately with Kepler's special computer system, fine-tuning it and helping the team interpret its results. (They have an affectionate nickname for it, he says, which he cannot share because it is classified.)

The system turns streams of raw data – billions of numbers – into a "picture" for analysts. So the "speck of dust" could be a planet as far as 3,000 light-years away. And it might have life on it.

Bigger questions

Nickerson's work is an extension of what he does for fun. He can't resist building or rebuilding things, from antique radios to old cars (he drives a lovingly restored '71 Camaro). He has too many hobbies to list in one breath, and he fancies retirement not as long days of relaxation, but the opportunity to develop a secondary passion: flying. He wants to be a flight instructor.

He has also logged countless hours piecing together a "home-brew" antennae and satellite station, used to talk to people around the world via amateur radio frequencies. His greatest feat so far was a conversation with someone in the Marshall Islands. He's sunk time and dollars to track down hardware and cobble together an advanced model that you can't find in any manual. And for what? Nickerson says it's the same old questions: Who's out there? Is anybody listening?

That drive for connectedness is why, in Nickerson's opinion, the Kepler Mission matters.

"For all of history, since we've been looking at the stars, the question has always been, What if we aren't alone in the universe?" Nickerson says. "But what if we don't find life – and we *are* alone? I think that's the more important question. Because if we are alone, maybe we'll start caring more for each other."

"They were the good guys"

Nickerson, 45, has two children, ages seven and four. He calls himself a "paranoid dad," and cites his kids as his most important job and hobby, period. So when he considers that question, it's not just as a scientist – it's as a father.

It's also why he became a Mason. Growing up, the fraternity represented humanity at its best.

"We had family friends who were Masons," Nickerson says. "I remember them for their strength and honesty. You could always rely on them." It was the 1970s, he explains, and there were a lot of bad things that a boy could get mixed up in or be disillusioned by. He saw the Masons in a different light. "They were the good guys."

In 2002 a neighbor helped him join the fraternity in South San Francisco. Nickerson has since affiliated with closer Burlingame Lodge. There, he's stepped in as tiler for the remainder of 2010, takes pride in his role as an investigator for

"We had family friends who were Masons," Nickerson says. "I remember them for their strength and honesty. You could always rely on them." It was the 1970s, he explains, and there were a lot of bad things that a boy could get mixed up in or be disillusioned by. He saw the Masons in a different light. "They were the good guys."

degree applicants, and between meetings, stays in touch with brothers on the Masons of California Facebook page. To boot, he's a member of Scottish Rite and York Rite.

In 2008 a coworker, Evan Brewer, asked him about joining Masonry. Nickerson recalls, with relish, "I made him work for it." Only after Brewer had proven his interest to Nickerson's satisfaction – a test of time and persistence – did Nickerson bring him to a lodge dinner and help him apply. Brewer subsequently asked Nickerson for help with the ritual.

"Because he was my buddy, I got to push on him to accelerate," Nickerson says. "And I ended up coaching him through all three degrees."

It struck a chord, and Nickerson remains a candidate coach today. Brewer, meanwhile, meets Nickerson at his home every month to drive to lodge together. He still makes it a point to thank Nickerson after every stated meeting.

We come in peace – plus truth, relief, and brotherly love

Weeks ago, battling after-work rush hour traffic and anxious to get home to his family, Nickerson merged onto the highway and saw an elderly man walking in the breakdown lane. He pulled over – an instinct, he says, more than reasoned decision.

The man got in the car and thanked him for the ride. He was trying to walk home, but couldn't remember where his home was.

He had an envelope in his pocket, with an address some 10 miles in the other direction. Nickerson didn't have a GPS and didn't know the area, but phoned a friend who guided him through the directions.

They pulled up to the address to find the man's wife sitting in the front yard, waiting. She'd had the police out looking for her husband. She had been waiting there all day for him to come home.

> "I was proud of myself for being a good Mason, and for being a good human being. I think that's why I value Masonry so much. Truth, relief, brotherly love – those are things that everybody needs, especially these days."

Nickerson is still bothered by what might've happened if he hadn't pulled over.

"He needed help. He needed somebody," Nickerson says. "And I realized: there was nothing more important in my day than helping him. I think God gave me that opportunity to help. We all get that opportunity every day.

"I was proud of myself for being a good Mason, and for being a good human being," Nickerson continues. "I think that's why I value Masonry so much. Truth, relief, brotherly love – those are things that everybody needs, especially these days."

"Hopefully when we do go into outer space," he adds, "we take those values with us."

web extra

Click here to check out the Kepler Project's "Search for Habitable Planets" Web site. There, you can read about the team's latest discoveries and get more information about the mission.

by Dr. Margaret C. Jacob

Isaac Newton's Legacy

His science influenced Masonry more than he'd ever guess… or care to admit

What does Isaac Newton have to do with Freemasonry?

On the face of it: nothing. There is not a shred of evidence that Newton had any Masonic involvement – or interest, even – in the first English lodges that took shape during the later decades of his life.

The same cannot be said of his friends. Newton would have known the architect Christopher Wren through the Royal Society. In 1691, it is believed, Wren had been admitted a Mason and may even have been made grand master as late as 1710. Newton's ally of the next generation, Jean Desaguliers, was a founder of British Freemasonry.

We can be confident that Newton knew about Desaguliers' Masonic activities – he was godfather to one of Desaguilers' children – but by the 1720s, when Desaguilers was still in his late 30s, Newton was already an old man. In his prime, though, there is not a shred of evidence that Newton's inner circle of associates – people like David Gregory and Samuel Clarke – knew or cared about Freemasonry.

The science of Masonry

Yet there was a distinctively Newtonian cast to the first formulations of Masonic beliefs and practices. By Newtonian, we mean a theology based upon Newton's physics, which argued that the universe was ordered and harmonious, and knowable by virtue of God's providential design. The "Grand Architect" instilled order, design, and harmony. That title's prominence in Masonic language owes much to the God of Newtonian science. While the rituals of early lodges undoubtedly drew more from their social rather than their intellectual history, the rituals' emphasis on cosmic symbols such as the sun and the moon can be related to Newtonian science.

Eighteenth-century almanacs – aimed at the general populace – still referenced a pre-Copernican Earth-centered universe.

But that model of the universe didn't appear in any Masonic literature (at least none with which I am familiar). Rather, Masonic rituals celebrated a new cosmic order, firmly heliocentric, mathematized, and law-like. Desaguliers' rather bad poem, "The Newtonian System of the World, the Best Model of Government," even attempted to apply the cosmic order decreed by Newtonianism as a model for law-like constitutional monarchy. We should also remember that 18th-century lodges sought to instill discipline, order, and decorum among their members, a gesture of optimism in a universe that had been rendered knowable and improvable. It was an optimism based, at least partly, in Newtonian science.

The Enlightenment of the 18th century owed its reformist and progressive cast to the model of success embodied in Newtonian science. That spirit manifested itself in an emphasis on charity, literacy, and self-discipline by lodges on both sides of the Channel and the Atlantic. A mid-18th-century Pennsylvania Masonic orator spoke about how the sun "unified and enlightened" the universe and bound it together "by the powerfully attractive influence of the Divine Principle of Friendship, Affection, and Knowledge." At the same time a Dutch orator proclaimed "I am truly persuaded that in our time, barbarity and superstition and ignorance are disappearing."

Later in the century words like *democracy* and *freedom* become commonplace in lodges as widespread as Boston and Paris. There, the lodge of the Nine Sisters welcomed Benjamin Franklin and described the French brothers as "citizens of the Masonic Democracy." In the 1790s German lodges openly proclaimed the principles of the French Revolution.

European brothers always acknowledged, however, that the principles of Masonic government originated in Britain. Records even exist of lodges using table-top demonstrations to teach applied Newtonian mechanics. Eighteenth-century Freemasons embraced progress and improvement as part of their mandate.

The man behind the science

Such secular optimism would have been foreign to Sir Isaac Newton, dour, brooding over his mathematical or alchemical papers, fully expecting that one day the apocalypse would arrive, ensuring the destruction of the anti-Christ. Newton belonged to a different, more profoundly religious age. Not least of all, he was not a joiner, nor even particularly communicative, except with those he came to trust – and they were few and far between.

There is no small irony in the way Newton's science came to be interpreted. The generations that inherited his science, and the many industrial applications of his mechanics, came to believe that in their lodges they could find a perfectly harmonious microcosm, a refuge from concerns, and a place for free and convivial conversation. Sociability lay at the heart of progress and reform, whether in society or the state. So while Newton's heavenly city was not of this world, in Masonic lodges it became possible to praise civil society in ritual and song.

When Newton spoke of harmony, he referenced a harmony of the spheres – celestial bodies circulating in time and space. When Freemasons of his age and beyond spoke of harmony, they referenced Masonic sociability. They viewed that sociability as imitative of Newton's harmonious universe.

Newton would neither have sympathized nor understood.

Editor's note: Dr. Jacob is among the world's foremost Masonic scholars. Her work, including the book "The Radical Enlightenment: Pantheists, Freemasons and Republicans," provides important insight into the early development of Masonry, and is largely responsible for documenting and establishing connections between early European Freemasons and the craft today.

Through our project to Advance the Study and Understanding of Freemasonry, Dr. Jacob has developed two undergraduate history courses about Freemasonry for the University of California, Los Angeles. The courses debuted in the Spring 2010 semester.

by Cason Lane

Friends of the Royal Society

Masonry's relationship with an underground group of scientists aided the birth of modern science

Early 17th-century England was a tough time for scientists. The church had a monopoly on truth, and those who disagreed with dogma could face imprisonment or death. Likewise, those who experimented with nascent ideas like logic or reason were often punished as heretics.

So, in the mid-1640s, a group of philosophers and experimenters took their discussions underground, forming an "invisible college" that met in different places to discuss the ideas that others condemned. From this organization was born the Royal Society of London, which still exists today as the oldest scientific academy in the world.

Indeed, for more than a century, the Royal Society was virtually the only group in Britain dedicated to scientific research, and it played a critical role in the "scientific revolution." It included members such as Isaac Newton and Albert Einstein, and is credited for the birth of modern science. But without early support and contributions from Freemasons, the Royal Society may not have flourished.

Freemason fellows

According to the Royal Society, the organization was officially founded on Nov. 28, 1660, shortly after the restoration of King Charles II. On this date, 12 members of the invisible college met at London's Gresham College to hear a lecture by astronomy professor (and future Freemason) Christopher Wren. Afterward, they formally established a club that would meet weekly to discuss the mechanisms of nature and perform experiments.

In addition to Wren himself, this group of founding

members – or fellows, as they were called – included Freemason Elias Ashmole, an astrologer and alchemist; Freemason Robert Moray, a natural philosopher; and other visionaries of the time, such as chemist and physicist Robert Boyle, best known for Boyle's law; and philosopher John Wilkins, founder of the metric system. After Moray secured the approval of the king, the organization was named the Royal Society.

In the early 1700s, Freemasonry continued to support the Royal Society – a risky allegiance, considering the boiling controversy surrounding science. From Mackey's Encyclopedia of Freemasonry:

"At a time when preachers thundered against these scientists, when newspapers thundered against them, when street crowds hooted at them, and neither Oxford nor Cambridge would admit science courses, Masonic lodges invited Royal Society members in for lectures, many of which were accompanied by scientific demonstrations."

Meanwhile, philosopher and Freemason John Theophilus Desaguliers – who in 1719 became the third grand master of England – was becoming very active in the Royal Society, befriending fellow visionary Isaac Newton and advocating his theories. Desaguliers, who served as curator for the organization, received its highest honor, the Copley Medal, in 1734, 1736, and 1741, with the last award recognizing his discoveries of the properties of electricity. Desaguliers is also credited for inventing the planetarium and for improving the steam engine by adding a safety valve.

Another Freemason who made notable contributions to the Royal Society was Joseph Banks, a naturalist and botanist who was president of the organization from 1778 until his death in 1820. According to the United Grand Lodge of England's Library and Museum of Freemasonry, Banks believed the Royal Society's membership should include not only working scientists but also wealthy amateurs, who could sponsor the scientists' research before the government considered doing so itself. Several of these sponsors – or patrons – were Freemasons, and they sometimes met with scientists in Masonic lodges.

> "We enjoy a high standard of living today only because the Royal Society changed public attitudes to science and technology."

Banks' views grew less popular in the first half of the 19th century, as science became more professional and the Royal Society began electing fellows solely on the merits of their scientific work. But Masonic lodges continued to attract these "amateur" scientists, and as science education expanded to include university science degrees and medical schools, many Masonic lodges drew their membership from these colleges, hospitals, and other groups of forward-thinkers.

The forefront of a new age

In conclusion, the Royal Society helped shape the future of science, and Freemasons helped shape the Society.

"We enjoy a high standard of living today only because the Royal Society changed public attitudes to science and technology," writes author Robert Lomas in his book "Freemasonry and the Birth of Modern Science."

Today, the Royal Society continues to promote excellence in science by funding new and established scientists, rewarding scientific achievement, furthering science education and research, and advising governments on aspects of science.

Their link with Freemasonry remains strong, from their storied pasts to their values today. Just as both organizations draw upon long histories of visionary thinkers, both continue to attract men of character and vision who advance them into the future.

web extra

Want to know more about the Royal Society? Click here to visit the official Web page. You can watch and listen to Royal Society events online, sign up for e-mail newsletters, and browse more than 70,000 books and journals in their archives.

Jennifer Whiteley first charmed residents of the Home at Union City when she was just two years old. Now she and her mother, Jocelyn Whiteley, carpool to work together at the Home. Clockwise from left: Jocelyn, Jennifer, Gloria Gatdula.

All in the Family

by Laura Normand

Three generations of employees raised a family – and found a new one – at the Masonic Homes

It's the first time since retiring14 years ago that Gloria Gatdula, 79, has stood in the lobby of the Masonic Home at Union City. She scans it from the top of the curved staircase to the front desk, and cocks her head incredulously. "They changed this."

And they didn't check with her first?

At that, she bursts into laughter. She's joined by her daughter and granddaughter, who just ended their shifts for the day, and still sport Masonic Homes and Acacia Creek nametags.

Gloria is the unassuming matriarch of these three generations of employees. Over the 15 years that she worked at the Home at Union City, its hallways formed the backdrop of countless family memories.

Granddaughter Jennifer Whiteley says it best: "The Masonic Homes has been a part of this family for as long as I can remember."

Like mother, like daughter... like granddaughter

Gloria first arrived at the Home in 1981, after moving from the Philippines. Her brother-in-law worked as a security guard there, and tipped her off to an opening as a nursing assistant.

Daughter Jocelyn Whiteley followed in her footsteps, and joined the staff in 1991 as a certified nursing assistant. Her own daughter – Jennifer – was just two years old.

Jocelyn and Gloria, who worked overlapping shifts, took turns baby-sitting. In the hours before the daily handoff, the Home became Jennifer's daycare and playground.

Every day, "my mom would bring me to work with her," Jennifer says. "I would visit with residents and play card games, watch TV, and eat treats they'd sneak me." She still vividly remembers rollerblading in circles around the parking lot.

By the time her grandmother retired, Jennifer was no longer spending every day at the Home – and she missed it. When she turned 17, she applied and was hired at the Home for her first real job: a part-time position at the front desk.

"As soon as I heard the chance to join the Masonic tradition, I jumped right on it!" she says.

Just months ago, she was hired full-time as concierge at Acacia Creek. Now, Jennifer carpools to work with her mother, who is coming up on 20 years with the Home. Gloria, retired since 1996, still misses it.

Big family values

Ask Jennifer how many cousins she has, and she pauses mischievously. "You mean total?" There are "hundreds" counting those in the Philippines as well as the U.S.; 10 or so in northern California alone.

Continued on next page

The first residents moved into the new Acacia Creek community March 1, and a crowd of 450 attended the traditional Masonic dedication March 14. Check out photos from both on our Masons of California Facebook page, and stay tuned for magazine coverage!

Your Member Benefits:
An important reminder

As a California Mason in good standing, or his wife or widow, you're entitled to the following support services no matter where you reside – whether in California or out of state:

- referrals to senior care providers, financial assistance, and/or care management in your home community, provided by Masonic Senior Outreach*
- admission to a Masonic Homes of California continuing care retirement community, located in Covina and Union City*
- help dealing with family issues, such as the impact of divorce, the stresses of a special needs child, and other life challenges, provided by Masonic Family Outreach

Call Masonic Assistance at 888/466-3642 or e-mail masonicassistance@mhcuc.org for information and support.

Some other member and widow benefits:

- monthly lodge Trestleboard
- inclusion on lodge phone tree and mailings
- bimonthly California Freemason magazine
- access to the Member Center on freemason.org (members only)
- Masonic funeral or memorial service (members only, at the request of family)

Some lodges may offer additional benefits. Contact your lodge secretary with specific questions. For general information, contact Grand Lodge at 415/292-9180 or memberservices@freemason.org.

*member must be 60 years or older and a California Master Mason in good standing for five consecutive years, or his wife or widow

So calling theirs a big family is an understatement. "Family values" barely skims the surface of what keeps them so tightly knit.

"We are a strong Filipino family," Jennifer says, as Gloria and Jocelyn nod their approval. That might sum it up.

Sitting in the Home's "living room" off the lobby, the three women string stories together in chorus, alternately chiming in to embellish each other's answers. Jennifer reminds Jocelyn of the time she got a second job just minutes from home in Manteca, then left it because she loved the job at the Masonic Home so much more, hour-long drive and all. Jocelyn pipes up to cue Gloria with the name of a resident.

Jennifer, now 21, carries herself with the same poise as her mother and grandmother. Like them, she treats the residents as family. As a teenager, she remembers calling a lonely resident from home to check in. She shrugs off special recognition for such gestures.

"We all get old," she says gently. "It will come back to you."

"You have to love them"

The conversation stops as an announcement comes over the intercom. Jennifer guesses which resident the voice belongs to, which Jocelyn considers, then corrects. It's a sort of family game.

Of the three, Jocelyn is quietest, preferring to let her daughter or mother answer. But it's clear from the steady stream of smiles and hellos from residents that she's a favorite at the Home.

The feeling is mutual. "The best part of my job is taking care of the residents," she says. "They trust me."

Residents and employees always tell her how much she reminds them of Gloria. Jennifer hears the same thing about her and Jocelyn. Besides their mannerisms and looks, the three share a characteristic compassion.

In the beginning, when Gloria first applied to be a nursing assistant, she'd only ever worked as a teacher. She was nervous about the job – "I didn't know anything about medicine" – but at the time, no certification was required.

Her compassion, work ethic, and rapport with the residents became a family standard.

So when Jocelyn started her job at the Home, Gloria offered a few words of wisdom: "Be honest. Make sure you respect them. You have to love them."

Truth, relief, love. That advice, worthy of any Master Mason, goes back to the deep-seeded values of this strong Filipino family, which Gloria has always extended to the Homes.

"This job was never just about the paycheck," Gloria says. "I feel like the residents are really my own family, as if they're my own mom or my dad." ✧

Connecting With Masonic Assistance

MASONIC SENIOR OUTREACH

Masonic Senior Outreach, a program of the Masonic Homes of California, provides the senior members of our fraternal family access to the services and resources they need to stay healthy and safe in their homes or in retirement facilities in their home communities.

These services include:

- Information and referrals to community-based senior providers throughout California
- Ongoing care management at no cost
- Financial support

Masonic Senior Outreach also provides interim financial and care support to those who are on the waiting list for the Masonic Homes of California. Contact us at **888/466-3642** or **masonicassistance@mhcuc.org.**

MASONIC FAMILY OUTREACH

Masonic Family Outreach support services are available to California Masons and their families who need help dealing with today's complex issues, such as the impact of divorce, the stresses of a special needs child, job loss, and other significant life challenges.

Our case management services are broad, flexible, and able to serve families in their own communities throughout the state. If you are in need of support or know of a family in distress, contact us at **888/466-3642** or **masonicassistance@mhcuc.org.**

ACACIA CREEK

To learn more about Acacia Creek, our new senior living community in Union City, visit acaciacreek.org or contact **877/902-7555** or **dwiley@acaciacreek.org.**

STAY INFORMED

You may request a presentation be made at a lodge meeting about the Masonic Homes and Outreach programs by contacting Masonic Assistance at 888/466-3642 or masonicassistance@mhcuc.org.

VISIT THE HOMES

Arrange a private or group tour to get a firsthand look at residential services on our two campuses. Be sure to call ahead (even if on the same day) so we can announce your arrival at the front security gate and make proper tour arrangements. Contact the Home at Union City at 510/471-3434 and the Home at Covina at 626/251-2232.

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- Masonic Senior Outreach
- Masonic Family Outreach

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