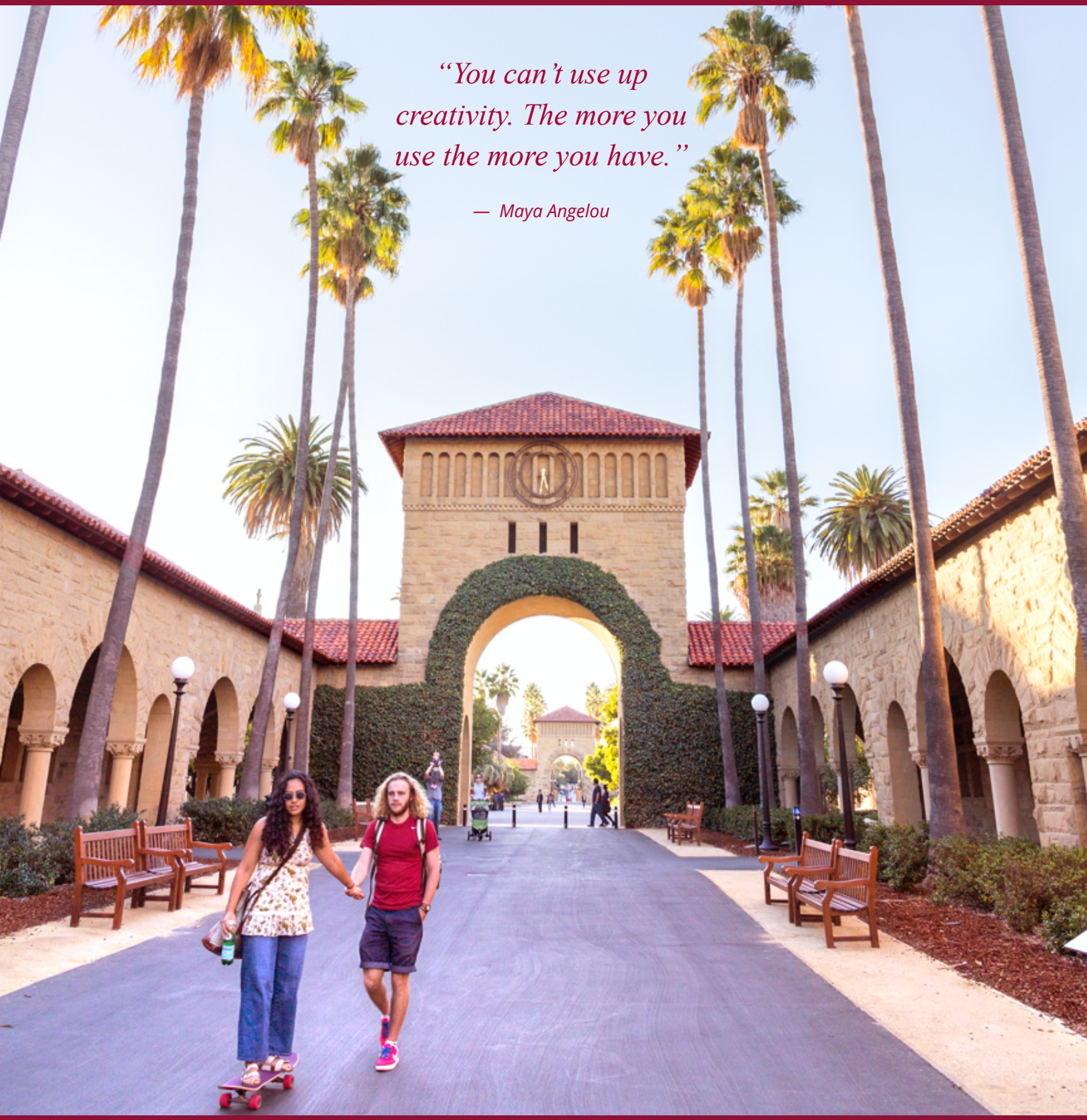
Stanford MEDICINE | Radiology

Diversity Newsletter

Vol. 3, Issue 4



Creativity

Dear colleagues,

Our April newsletter discusses the topic "creativity". The many responses and contributions that we received on this topic demonstrate the ingenuity of our community. Creativity is clearly our strength and at the very heart of diversity: As you can see, creators in our community are optimistic, multi-faceted, curious, open minded, intellectually flexible and imaginative. Creators can spark a smile and make our day a little better. Creators can also teach us to think differently.

As we are approaching the peak of the COVID-19 pandemic, creativity is more important than ever. In order to get through this crisis, we need to change and contribute in new ways. We need to re-invent ourselves, find new ways of coming together and learn to coordinate our efforts better. Perhaps a positive result of the pandemic is that we are getting ready to accept big, major changes. This is a time that is ready for disruptive innovation. And the best thing is: You do not have to do it alone. By combining our diverse skills and experiences, we can leverage unused potential and new ideas to create better medical care, world-class education and groundbreaking scientific advances. As a community, we can solve different facets of an unprecedented crisis: Some of us will save lives of critically ill patients. Others will generate new inventions that will advance patient care and refuel the economy. We will support each other. It is okay to be human. It is okay to feel emotions. It is okay to show that we care, grieve and love. In the end, our compassion for each other will be the force that gets us through this pandemic.

As our authors explain, creativity can only thrive if there is a culture of inclusion where knowledge and resources are shared. I sincerely thank the contributors of our newsletter for taking the time to share their insights and expand our horizons. And thank you for joining the conversation!

Heike E. Daldrup-Link, M.D, Ph.D.
Professor
Associate Chair for Diversity
Stanford Medicine | Radiology

Stanford MEDICINE | Diversity Initiative Radiology

THE SURPRISING HABITS OF ORIGINAL THINKERS

How do creative people come up with great ideas? Organizational psychologist Adam Grant studies "originals": thinkers who dream up new ideas and take action to put them into the world. In this talk, learn three unexpected habits of originals -- including embracing failure. "The greatest originals are the ones who fail the most, because they're the ones who try the most," Grant says. "You need a lot of bad ideas in order to get a few good ones."

https://www.ted.com/talks/adam_grant_the_surprising_habits_of_original_thinkers

DO SCHOOLS KILL CREATIVITY?

Sir Ken Robinson makes an entertaining and profoundly moving case for creating an education system that nurtures (rather than undermines) creativity.

https://www.ted.com/talks/sir_ken_robinson_do_schools_kill_creativity

DESHAUNA BARBER: ONE QUESTION CHANGED HER LIFE FOREVER

Miss USA 2016 Deshauna Barber explains in this powerful speech how she was suddenly approached by a Target customer who changed her life forever...

https://www.youtube.com/watch?v=7BRrvPQzTwE&list=PL-PwLDP5cL6nXUa9iSK8HyQgOfGsp-KzCp&index=36

"Creativity is intelligence having fun"

– Albert Einstein

Irit Gal, MS, MA - Stanford | OTL

I cannot imagine a better place to be at to constantly be amazed by creativity. Here at Stanford I'm surrounded by creative people, a community supported by a culture that seeds creativity and cultivates it, and where people are highly motivated to create, invent, and think, in-and-out of the box. It is a place where people dare to think up ideas that may be more than ten years ahead of the curve, and where the time for idea-to-product is measured in many years. Many will never be realized, because failure is a part of the journey. In case you are a researcher or clinician-scientist at Stanford, the current "time out" for most "hands on" scientific experiments might provide you with some time to submit your invention to the Office of Technology Licensing Office: https://otldisclosure.stanford.edu/gen_login.php

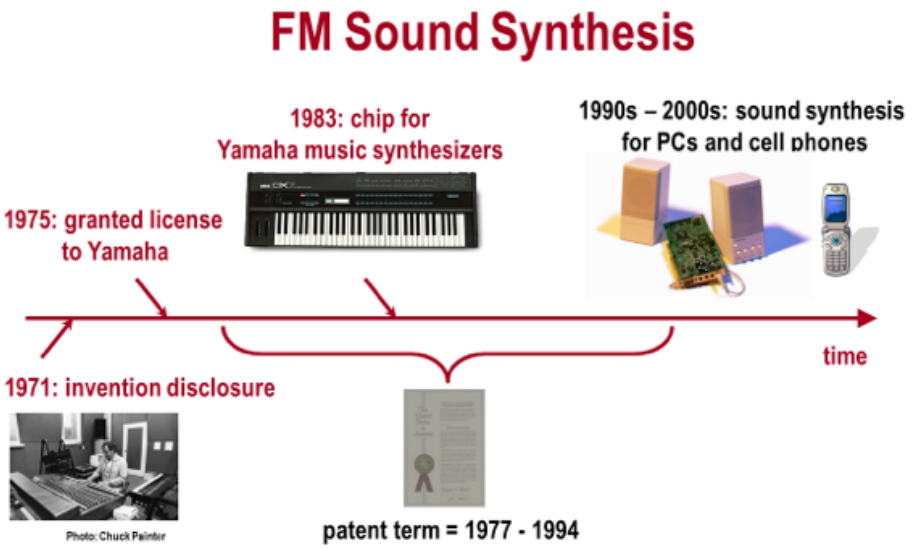
An invention starts with an idea and some form of validation that it is likely to work and be realized. It takes daring, imagination, and vision—as well as funding and, typically, many years—to transform an idea into a reality and into a useful product.

At the Stanford Office of Technology Licensing (OTL), we invest in embryonic stage university research inventions, and then we take a very long, deep breath as we wait to see an invention being transformed into a useful product, such as a medicine or a service that would benefit the public. It requires an institution with a very long view, and the belief that while many creative ideas will not make it to the market, the few that do will improve our lives, and change the face of the world for the better.

Consider one of the more impactful Stanford inventions from around the time OTL was established in 1970.

The FM Sound Synthesis technology was disclosed in a 1971 invention. It took twelve years for the technology to become available in a commercial product, a Yamaha sound synthesizer. Decades later the technology was adapted for sound synthesis in PC's and cellular phones (see illustration below). Similar trajectories are common for many impactful inventions

This year OTL is celebrating 50 years of transferring innovative technologies to industry.



Some of our notable inventions include:

- Antibody therapies: In the 1980s, Leonard Herzenberg, Vernon Oi and Sherie Morrison invented a technique for producing functional antibodies, enabling treatments for such conditions as autoimmune diseases and cancer.
- Digital music: John Chowning developed FM sound synthesis for digitally generating sounds in the late 1960s, leading to the music synthesizer.
- DSL: In the 1980s, John Cioffi and his students discovered how to use traditional phone lines for high-speed data transmission, resulting in patents used in asymmetric digital subscriber lines.
- Google: The world's most popular search engine got its start at Stanford in 1996 when Sergey Brin and Larry Page developed the page-rank algorithm while graduate students.
- Recombinant DNA: This ubiquitous tool for molecular biology was developed in 1973 by Stanley Cohen and Herbert Boyer to enable scientists to perform genetic engineering by combining pieces of DNA from different organisms that led to the biosynthesis of human Insulin.
- Tuberculosis test: Gary Schoolnik and his colleagues developed a diagnostic test for tuberculosis that can distinguish between patients who have been vaccinated and those who have the disease.

In a well-known Seinfeld episode, the mailman Newman proclaims, "the mail never stops coming, it never stops, it keeps coming and coming…" Likewise is the case with inventions from Stanford researchers, they keep coming every day through the creative and forward-thinking efforts of our community of problem solvers; they never stop creating and inventing… and creativity breeds more creativity by that same community, it's contagious.

Stanford has an amazing infrastructure that contributes to creativity, it fosters an environment where researchers and investigators from multiple disciplines are in close proximity to each other, enabling cross fertilization. It is a place where physicists and physicians, chemists, and engineers are all working together. For instance, at the intersection of genetics and bioinformatics, researchers are inventing Artificial intelligence (AI) technologies that promise to change how radiology diagnoses are made; increasingly images will be analyzed and interpreted by a machine that assists the diagnosing physician in his or her work, potentially making diagnoses faster, more accurate and allowing for remote areas to connect to a better infrastructure.

The horizon constantly keeps moving, while the research community keeps inventing in ways we don't yet anticipate.

Irit Gal, MS, MA

Senior Licensing Associate
Office of Technology Licensing
Stanford University

Read how the technology offices at Stanford, Harvard and MIT have collaboratively established a set of technology licensing principles that will provide broad and fair access to university innovations during the global pandemic:

https://otl.stanford.edu/news/ensuring-access-lifesaving-technologies-during-pandemic

Marie-Anne Valiquette, Chris Letrong, and Kyle Gifford are leading 3D printing services in the 3D lab at Stanford for COVID-19 related requests:

PROTOTYPING RESPIRATORY MASK

The need for respiratory masks has skyrocketed in recent weeks in response to COVID-19. To address this challenge, the 3DQ lab helped with the prototyping of respiratory mask to aid in the Personal Protective Equipement (PPE) shortage. The idea is to exchange the filter portion and reuse the mask by sterilizing it. Each prototype was printed and delivered within approximately 5 hours. The printer used is from NewPro and the material is from Henkel – Rh Flex.

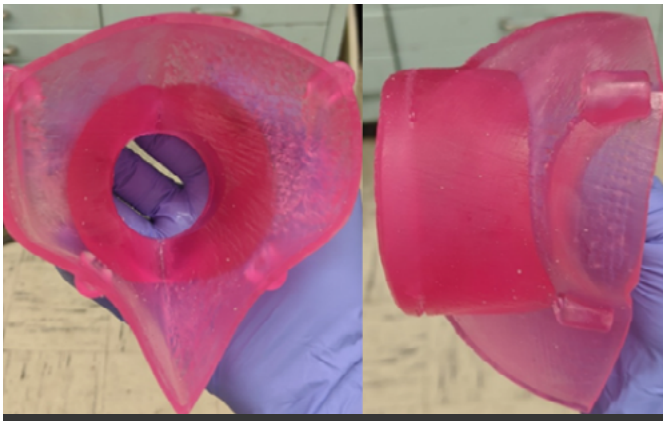


Figure 1: Respiratory Mask - Prototype I

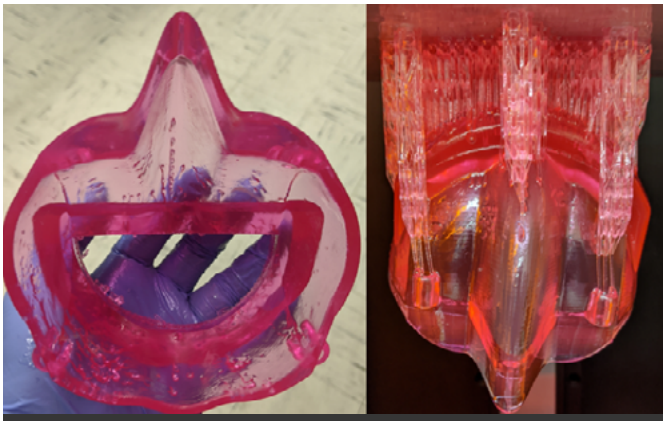


Figure 2: Respiratory Mask - Prototype II

MDI ADAPTERS

In collaboration with the Airan Lab, Dwayne Free and Kristin Merriman from Respiratory Therapy, the 3DQ Lab is printing T-adaptors for medication vaporizers to interface with inhalers and ventilators. These adaptors, which are subject to a nationwide shortage, will enable the rapid delivery of medication to patients in respiratory distress and are undergoing clinical testing now. The 3DQ lab is currently testing different designs on two printing technologies and different biocompatible and sterlizable materials. The first printer called Form2 from Formlabs uses stereolithography (SLA) to create 3D objects. Form2 uses an ultraviolet laser light to cure solid isotropic parts from a liquid photopolymer resin by lowering the print platform into the resin glass tank. The material used to produce the MDI adapter (Figure 3) is called Dental SG.

Figure 3: MDI adapter prototype - SLA technology

Figure 4: MDI adapter prototype - DLP technology

The second printer called NewPro1 uses a digital light projector screen. It is similar to SLA technology, but instead of a laser individually curing the resin in a "point to point" technique, the DLP projector flashes an image of a layer all at once, therefore all points of a layer can be cured simultaneously, which increases print speed. The material used to prototype with NewPro (Figure 4) is called Veriguide OS.

FACE SHIELD

In collaboration with the Rutt lab, the 3DQ lab explored the possibility of 3D printing face shields for the medical community. A number of designs have already been tested and approved clinically by the NIH and FDA. The 3DQ lab and the Rutt lab simulated a number of these designs and optimized printing parameters to increase the number of face shields produced without compromising the quality and the durability of the face shields. As an example, in 24 hours, the 3DQ lab is able to print 18 of the visor shown below in figure 5.

Figure 5: Stratasys Design version 1

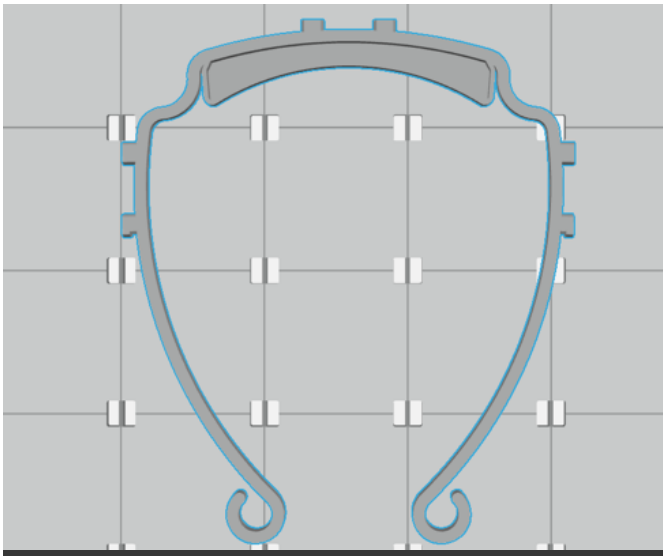


Figure 6: 3DV design visor

We are currently also exploring another design (Figure 6), which would allow us to print approximately 80 visors per day with the help of the Rutt lab.

Shannon Walters

Executive Manager
3DQ Lab
Stanford | Radiology

Increasing safety and efficiency of obtaining chest x-rays of COVID-19 patients

The Stanford thoracic imaging team introduced a workflow to obtain x-rays of patients with COVID-19 through a glass window. This is a team effort by Natalie Dell'Immagine, Marilyn Son, Soheil, Damavandi, Judy Wood, Christoph Zorich, Dot Cordova, Nayeli Morimote, Sarah McKenney, Jia Wang, Lance Philips and Ann Leung. The team adapted this technique from others who were using it at Kaiser Permanente, University of Washington and Yale. The University of Washington may have introduced it first during the Ebola outbreak. Our team learned that colleagues at Kaisers were doing this for COVID-19 patients and one of our ED docs was incredibly interested in being able to have this performed at Stanford as well. The article detailing the experience with COVID-19 at the University of Washington was published in Radiology: https://doi.org/10.1148/radiol.2020201326

As background, every PUI/COVID-19 patient in the ED who needs a chest x-ray gets a portable x-ray. This usually entails a technologist needing to gown up in full PPE (gown, goggles, gloves, N95 mask), stepping into the patient room, placing a bagged x-ray plate behind the patient, obtaining the images, stepping out of the room and performing an extensive cleanup of the portable machine and plates. Due to constraints in obtaining PPE in the ED, it could take up to an hour to take the portable images. Also, the cleanup of the portable machine is quite lengthy. We launched this to limit exposure and potential spread of the virus, conserve PPE, and increasing the time efficiency for obtaining the x-ray (if the machine isn't taken into the room, then it doesn't have to undergo the lengthy decontamination cleanup).

A team was formed and multiple people were involved in getting this launched. For the technical aspects and radiation safety, our physicists optimized different parameters using phantoms and determined radiation safety for the patient, personnel in the room, and backscatter, while trying to optimize image quality. Several of us evaluated the image quality on these phantoms. Once a work-

flow was established, we imaged the first patients, assessed image quality and further optimized the procedure. This optimization process is continuing and has been iterative. The procedure is mostly provided in the ED for now.

Details of the workflow: When a nurse is in the patient room to take care of her COVID-19 patient, the ED staff calls us (Radiology) for an x-ray. When the x-ray technician gets there, the nurse (usually) is already in full PPE gear and with the patient. The technologist and the machine stay outside. The technologist passes the plate (double bagged) through a slightly opened door and instructs the nurse how/where to position the plate, patient and patient bed to get the x-ray source-to-image distance (SID) as close to optimum as possible. An image is obtained, reviewed and can be repeated if necessary. The nurse stands behind a lead shield in the room while the image is obtained. Afterwards, she gives the plate back to the technologist through a minimally opened door. The potentially exposed outer bag is cleaned by the nurse and kept inside the room while the inner bag is grasped by the technologist and pulled outside. The nurse disposes of the outer bag. The inner bag and the plate are also cleaned. The lead shield in the room is thoroughly cleaned when the patient is discharged and the room is vacated.

So far, the procedure has worked very well and there haven't been any repeats. We obtained one image per patient, which is great! Around 15-20 of these are performed per day in our ED right now.

Nayeli Morimoto, MD

Clinical Assistant Professor
Stanford Medicine | Radiology

Natalie Dell'Immagine, RT(R)(ARRT)

Manager, Imaging Services - Diagnostic Radiology
Stanford Medicine | Radiology

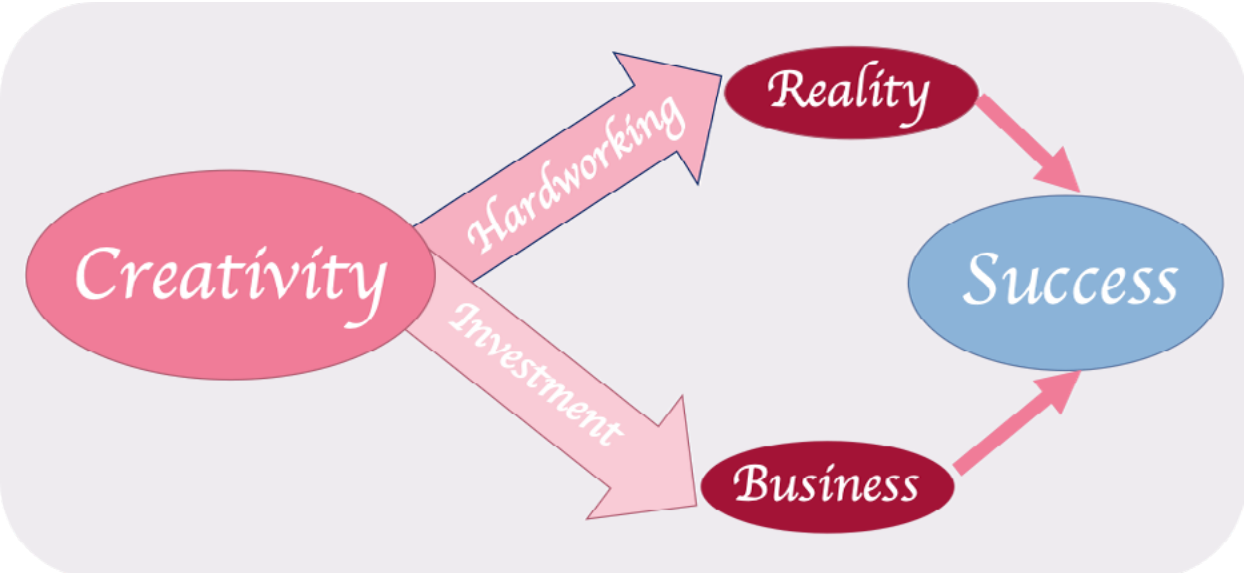
Ann Leung, MD

Professor and Associate Chair for Clinical Affairs
Stanford Medicine | Radiology

I always imagine myself as a learner rather than a teacher. I gained most of my skills through teaching others. In my experience, I considered "creativity" as a primary factor in my success. At the same time, I am also very well aware that creativity alone cannot help in achieving the goals. It should be combined with hardworking and constant efforts. In my words, "creativity" is fantasy and "hardworking" is the truth. Combining these two can results in success. Anyone can imagine something. But it will only become reality when we invest the effort to bring it to the bench. Having said that, the road to my career was not very smooth. I achieved most of my career goals through creativity and hard efforts. I know that getting anything without effort is valueless, which is why I value all the hurdles that educated and prepared me to get here (to Stanford) from nowhere.

I always try to think in new and creative ways to find a solution for an experimental problem. I never follow protocols provided by the creators without analyzing the reason and the necessity of each step. Based on my experiences, I believe that creativity arises from scarcity most of the time. The need to achieve a specific goal with limited resources can make you very creative. I harnessed this ability by developing my own way of modifying a laboratory protocol to produce better results that may work more efficiently than the original procedure. I enjoy connecting with my work in a creative manner rather than mechanically following pre-set instructions.

Willingly or unwillingly, most of the successful entrepreneurs of our times happened to be college dropouts. This is also true for my life story. After my high school education, due to my family's economic background, I chose not to go to college. Instead, I attempted to succeed in several small investment businesses. This led to struggles, which lasted for three years. But this experience helped



me a lot to learn and get to where I am today. I consider this time as an important period in my life, because I realized that creativity is the key to success, as Abdul Kalam once famously said. Without the ability to be creative, working hard and obtaining investments, I would not have been as successful in my life as I am now.

Ramasamy Paulmurugan, PhD

Associate Professor
Molecular Imaging Program at Stanford (MIPS)
Stanford Medicine | Radiology

"The difficulty lies not so much in developing new ideas as in escaping from old ones."

– John Maynard Keynes

Creativity is fueled by open discussions and diverse feedback

I haven't thought much about creativity in the last couple of years. After all, medicine is a field that does not allow too much creativity on a day to day basis. I think this is largely due to the priority on safety and standardization of procedures. Usually, following the way things have been done in the past or are recommended is safer than a spontaneous idea on how to do it differently. One might even say that medical education with standardized tests and clinical practice with rigid guidelines effectively removes creativity from the profession. This is not ideal because in some cases, such as unusual clinical presentations or combinations of diseases, there actually is a role for creative thinking in clinical medicine.

The area where I experienced a stronger emphasis on creativity is in medical research. I had the opportunity to work in several different research groups at the NIH and they all had different approaches on how to drive the research forward. I feel like the research group of Dr. Ronald Summers - which has a strong computer science and imaging focus - has a very good approach to this. Once a week, there was a lab meeting in which one or two lab members would show their recent results and make suggestions on how to move forward. This was followed by a very open discussion where everyone could chime in. This meeting was held in a centrally located, open, and moderate size auditorium and anybody from other labs/areas was always welcome. The research was very innovative and the culture was very open and this led to colleagues from outside the lab and even outside the NIH joining for this meeting on a regular basis. This resulted in a diverse group of people with different backgrounds, nationalities, and levels of experience. I truly enjoyed these meetings and I joined in for the meetings long before joining this research lab. There was a lot to learn and the research projects I worked on later and projects of other lab members clearly originated effortlessly in these meetings which I think is a feature of creativity.

Hopefully, these direct face-to-face research team discussions will return in the not too distant future. Currently, during the COVID-19 pandemic, I am working on improving my general radiology knowledge in order to be most helpful to our clinical colleagues.

Veit Sandford, MD, PhD

Radiology Resident
Stanford Medicine | Radiology

Creativity is a process that involves the identification of hidden patterns followed by the connection of seemingly unrelated ideas in unique and exciting ways to produce tangible results. It is often refined by the application of knowledge, divergent thinking skills and exposure to new experiences. My creativity is sparked by the environment with generous doses of nature and art. There are plenty of opportunities to experience this at the Stanford University campus. From the serene Sculpture Gardens, to the panoramic view of the Bay from the Hoover tower and the captivating pieces in the Cantor Arts Center that transport you to various regions in Africa, Europe and Asia. All of which nurture my creativity and allow me to approach research from a different perspective. Frequently, scientific research is viewed as a linear and logic process to solve problems. We identify an unmet need, propose a hypothesis, design experiments to test our hypothesis and acquire data that is presented in a structured way. While this rigorous approach is valued, stepping away from the normal routine in the early stages may create an opportunity to explore the research problem from different viewpoints to consider alternative solutions.

The creativity process in research can be stifled by the limited availability of funding to explore new ideas and produce tangible results. This limitation is a major concern for early career researchers. However, the Radiology Department is actively involved in supporting researchers by allocating vital funds for the advancement of science. It is encouraging to know that the Radiology Department has measures in place to fuel creative sparks.

Louise Kiru, PhD

Instructor
Stanford Medicine | Radiology

Diversity + Inclusion = Creativity

Dr. Tessier-Levigne, President at Stanford University, and Dr. Bonnie Madonado, Senior Associate Dean for Faculty Development and Diversity at the School of Medicine,

hosted an inspiring luncheon and discussion for women faculty on March 4, 2020. The president explained the Universities long-range planning process, discussed ideas specifically related to women in STEM and provided reflections in how diversity and inclusion can foster creativity and innovation. More information can be found here: https://planning.stanford.edu/

"One day you will wake up and there won't be any more time to do the things you've always wanted. Do it now."

– Paulo Coelho

The Culture of Collaboration and Innovation

In the 6+ years I've worked with Dr. Jeremy Dahl, it's the opportunity to creatively and collaboratively pursue new approaches to meaningful and challenging problems that continues to be the most motivating and rewarding aspect of my work on ultrasound technology. Jeremy hired me to take on a project developing a new intravascular ultrasound catheter device capable of imaging the elastic properties of tissues (i.e., to see the "stiffness" of clots and plaques, not the typical ultrasound echogenicity). I introduced a new design concept early on, and Jeremy was immediately on-board and supportive; we have since proven the feasibility of the approach and added another valuable team member to the project, which continues to expand in the scope of the device's capability and its potential clinical applications.

Another creative project I've been able to pursue in recent years is sensor-based, low-cost 3D ultrasound. The idea spawned from a conversation with an emergency physician, and Jeremy agreed to support an undergraduate intern for a summer under my mentorship to start. The prototypes we've been able to create have led to an IP filing, multiple translational and clinical research grants (involving more than 10 undergraduates, grad students, and residents), more than a half-dozen publications, and a small start-up company--and the work continues today.

I could give several more examples of cool projects and people that demonstrate and stimulate creativity, but to step back and answer the question "What do I need to be creative?", I would have to say: (1) a setting or environment that allows and encourages thoughtful exploration (likely enabled by a supportive mentor/supervisor or organization), and (2) at least one partner/collaborator/team member with shared enthusiasm, desire, and commitment to work together toward the success of the project. Jeremy, my excellent lab-mates and mentees over the years, and the culture of collaborative innovation in the Radiology department--and Stanford as a whole--have all served to foster creativity in myself and so many others around me every day.

The COVID-19 pandemic has hit hard and, at a minimum, changed people's perspectives and attitudes toward health (in both personal and societal terms), forcing many to re-shuffle their priorities and routines. I consider myself very fortunate to be healthy and able to continue much of my work remotely, and a creative approach is continually required to juggle work and family commitments. I've made use of noise-canceling headphones that allow better and longer periods of focus on work, and my wife and I have our creativity challenged daily keeping our 19-month-old daughter actively engaged indoors most of the day. We try to stay positive, and maintain perspective and a conscious sense of gratitude (e.g., saying "get to" rather than "have to") while doing what we can to contribute, keeping in mind that there are so many lives lost and families devastated by this outbreak, and so many of our friends and colleagues in the clinic are on the front lines battling the crisis day in and day out.

Carl Herickhoff, PhD

Research Engineer
Stanford Medicine | Radiology

Presence and Awareness for Creativity

"Nothing, to my way of thinking, is a better proof of a well ordered mind than a man's ability to stop just where he is and pass some time in his own company."
— Seneca, Letters From a Stoic

The act of mentally focusing one thing at a time is attention. This is quite challenging in today's world because of the complexities surrounding us. Either by choice or intuitively, the nature of our mind is to attend to all the things within our field of perception. While attention to external experiences is at maximum, inward reflection is usually dampened or vice versa. We are attending to one thing and suddenly, our mind moves on to another without much self-realization. The more our minds jump from one thing to another, the easier it is for us to lose awareness because the very act of distraction comes with intermittent gaps of non-awareness. In low awareness or autopilot modes, the neuronal circuit fires rather mechanically based on already learned information and as a result, our conscious thinking or creative faculties of the brain remain inactive.

As an example, while driving to work once, I was very distracted by invasive thoughts related to work and life. In hindsight, without any conscious effort, I still took the usual turns at traffic stop points because the neuronal program established from all the days I have taken this route had fortunately pre-registered as my backup driver. Indeed, the default mode network in our brain evaluates our past experiences to calibrate our relative position in the very next moment. However, the world around us is ever-changing and re-learning things in a different light requires the creative side of our brain.

Turning on our creative faculties first takes being fully in the moment. The age-old meditation and specialized breathing exercises (4-7-8 breathing technique) teach us to practice attention for an extended period of time, resulting in a so-called state of flow or presence or peaceful awareness. For instance, fMRI scans of people practicing long-term meditation show decrease in emotional dysregulation associated activity in amygdala as well as an increase in the networking between different brain regions related to cognition. When we anchor to our natural breathing and let our thoughts freely play out without suppression, it not only keeps us fully grounded to the present moment but also reduces any gaps of non-awareness arising from distracting thoughts. In the state of full awareness, we tend to gain balanced perspectives on situations compared to when we are multi-tasking, anxious, judgmental and impulsive. Besides meditation, any other activity one is able to fully enjoy can also induce this same state of flow.

During the COVID-19 pandemic, silent meditation (Vipassana) and controlled breathing techniques are helping me reframe my fears regarding the viral transmission and its consequences. Trying not to place any self-serving judgments on my thoughts helps me accept the current reality as it is. Practicing presence also lets me relax, adopt one day at a time approach, value simplicity and channel my energy to stay productive in creative ways.

Rakesh Bam, PhD

Research Scientist, Dahl Lab
Stanford Medicine | Radiology

'Zoom Out' to Be Creative

What does a colourful balloon soaring high in the sky symbolize? Success? Elevation from a situation?

Progression towards freedom and happiness?

Add more to this interpretation and relate the visual to 'Zooming out as the key to creative freedom and thus creativity'. The raised balloon soaring over a calm sea and the zoomed out perspective is symbolic of a mind involved in creative thinking, a mind, in a space having a wide analytical view, a mind experiencing creative freedom, while working towards establishing stability and harmony around.

The need for creativity is justified, as there is need to create impactful solutions to life problems, solutions that bring benefit to all those affected and the environment as a whole. However, this requires universal connectivity and alignment of ideas with the plan of nature; and the key to establish this connection is to ZOOM OUT, keeping your problem at the epicentre. ZOOM OUT to disconnect, to a scale that allows you to perceive a 4 dimensional analytical view to your problem.

As you ZOOM OUT, you may realize some problems need no solution, since they are in alignment with the law of the nature, for e.g. the injustice that you see in a snake swallowing a rat or you, being put in tough learning situation, complies with the law of nature. Therefore, use your creativity in solving problems that supplement the universe and not your short-term goals.

While in the ZOOMED OUT space, you will find bits and pieces of information scattered around. Use your creativity to find relationship between these scattered pieces of information and put them together.

Finally, out of the multiple solutions that come to your mind, choose the simplest of all to ensure maximum impact and to deliver your best creativity.

Try.....

Dr. Rozy Kamal

Assistant Professor
Department of Nuclear Medicine
Manipal College of Health Professions | Manipal Academy of Higher Education
Manipal, Karnataka, India

Quiz: Whats your creative type?

Any artist you've ever heard of has had something besides talent, dedication or luck behind them: Most of them knew why they created. When you know what drives you -- and what encourages and discourages you -- you're better able to keep yourself on track and enlist friends and colleagues to rally you during dry times or tough times. By discovering what drives you and your art, you can tap into your deepest motivations and achieve your full creative potential. Take this quiz to find out your creative type:
https://ideas.ted.com/quiz-whats-your-creative-type/

PEOPLE ARE SHARING HILARIOUS PHOTOS HOW THEY ARE WORKING FROM HOME:

https://www.brain-sharper.com/social/funny-photos-working-from-home-tw/?utm_campaign=Funny%20WFH%20Elena%20V1%20En%20-%20Desktop%20USA%20TW&utm_source=Twitter&utm_medium=WC&psl=i_5486fa

IF YOU ARE DREAMING OF A SUNNY WEEKEND IN THE SIERRA, THIS IS FOR YOU.

Philipp Klein Herrero is a filmmaker and skier currently on lockdown in Barcelona.
https://www.youtube.com/watch?v=_HrIVWziJ0Y
You can watch his other [outdoor] ski videos here
https://www.youtube.com/channel/UCdQY1jBGnqZ7vORXHt0fHQQ

BROWSE PHOTOS FROM SPACE

NASA made its entire photo collection available for free: https://images.nasa.gov/

A 12-YEAR OLD WEB DEVELOPER

Most 12-year-olds love playing videogames -- but Thomas Suarez taught himself how to create them. After developing iPhone apps like "Bustin Jeiber," a whack-a-mole game, he is now using his skills to help other kids become developers.

https://www.ted.com/talks/thomas_suarez_a_12_year_old_app_developer?utm_source=t.co&utm_campaign=social&utm_content=talk&utm_medium=referral&utm_term=technology

Artistic Views of the Bay Area

Dr. Mike Federle is trying out a new editing process that allows to combine the look of painting on the foundation of photography. These photos here are from his visit to the Monterey peninsula. He describes his new creative work here:

I just got into digital photography within the past year, but I have spent a lot of time taking online classes and love shooting photos locally or on dedicated outings. I have and use some big fancy DSLR equipment, but most of my photos are done and edited on my iPhone and iPad.

Bringing Nature Home

In something of a past life, I was a sculptor, earning my Master of Fine Arts degree from San Jose State. While it didn't turn into a career, it feeds a rewarding hobby, and even more so helps me in my present work. Steeping myself in the processes of creativity was as much about problem solving as it was about personal expression. One process, in success or failure, would build upon another, while I figured out how to make it work, so I could ultimately push through what I intended, which is a large part of what I still do today.

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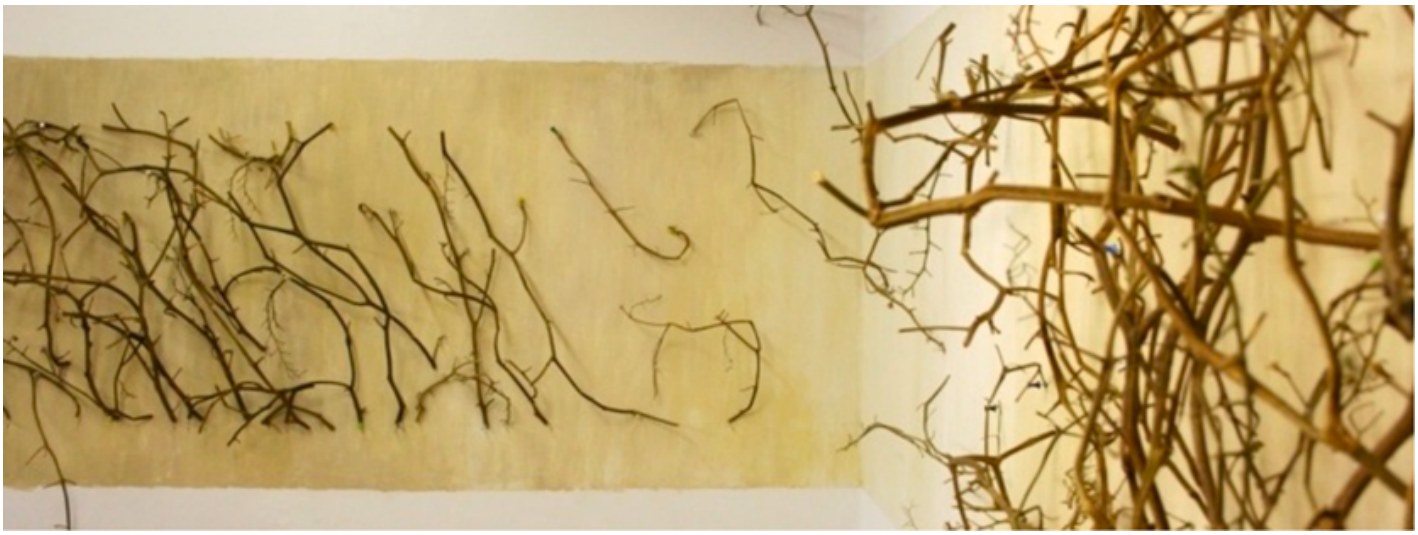

The most Authentic Swedish Recipe for Cardamom Buns You Will Ever Find (in a radiology newspaper)

DOUGH

125 g butter
500 ml milk
12g active dry yeast
1 tablespoon coarsely ground cardamom
3g salt
180g granulated sugar
900g all purpose flour
Pearl sugar if desired for garnishing

FILLING

20g cardamom kernels
200g sugar
200g room temperature butter

SYRUP

75g Water

70g granulated sugar

Start with the dough: 1. Melt the butter and pour in the milk and heat it to 98.6F (37C). Add the cardamom, salt, sugar and most of the flour and mix until you have a smooth dough. Let the dough rest for about 40 minutes. After resting, put the dough on a lightly dusted board and roll it out to a rectangle about 40x60cm (15.8x23.6 inches) for 30 buns.

Filling: Grind the cardamom kernels. Mix the room temperature butter with the sugar and freshly ground cardamom kernels. Spread the filling on the rectangular dough and then fold the dough in half so all the filling is covered by dough.

Baking: Cut up the dough in 2cm thick slices and start rolling them up as wished (several Swedish bakery youtube videos exist for the perfect shape, if desired). Place the buns on a pan and let rest covered for 30 minutes. Set oven to 480 F at least 30 minutes before starting to bake, if you have a baking stone it is ideal to preheat it now. Make your syrup by cooking the water and granulated sugar together until boiling, then let rest. Brush the buns lightly with the syrup. Bake in the oven for 10 minutes. Share the buns with your radiology family!

This recipe was brought to you by frequent Swedish cardamom bakers:

Mana Shams, MD, PhD

student from Stockholm, Sweden who visited Stanford radiology summer 2019 and will be doing the same summer 2020 for research. Future radiology applicant.

Sara Shams, MD

2nd year radiology resident, born and brought up in Stockholm, Sweden.

Human Spirit from Around the World

Dr. Martin Willemink, instructor at Stanford Radiology, expresses his creativity in photography. Here are examples of his photos, which he took in different parts of the world and which show the beauty of diversity.

"The most talented, thought-provoking, game-changing people are never normal."

– Richard Branson