Important Dates

8/09 Reflective Case Rounds
8/13 Recruitment Committee Applications Open
8/15 Extension Request Form Deadline
8/19 Preferences Sign Up Open
8/19 Recruitment Committee Applications Deadline
9/01 Admissions Committee Applications Open
9/02 Preferences Sign Up Close
9/03 Labor Day Holiday
9/08 Admissions Committee Application Deadline
9/24 UCLA Fall Quarter Begins
9/27 UCLA Fall Quarter Classes Begin
9/30 Fall Department Assignments and Meeting Information Posted
10/02-10/04 Prospective Care Extender Orientations
10/09-10/10 Prospective Care Extender Interviews
10/28 DCA Applications Open
10/31 New CE Check in Day
11/03 Training Day and Department Meetings
11/10 DCA Applications Deadline
11/11 Last Day of Fall Rotation

*Inflective Case Rounds serve as an opportunity to discuss the challenges and emotions involved in caring for our patients and families. will take place on Thursday August 9th from noon to 1pm at Ronald Reagan UCLA medical center, Tamkin Auditorium.
UCLA researchers have made a pivotal movement within the research community of T cells, by developing synthetic T cells.

The T cells have been said to be near-perfect facsimiles of human T cells.

The discovery holds great potential for future treatment of cancer and autoimmune treatments. The better understanding of the behavior of immune cells allow for the improvement of the immune system in those with immune deficiencies.

The discovery is attributed to the research team which was comprised of scientists from various departments within UCLA. These departments being the UCLA School of Dentistry, the UCLA Samueli School of Engineering and the Department of Chemistry and Biochemistry at UCLA.

The team of diverse scientists was headed by the Assistant Professor of prosthodontics at UCLA School of Dentistry, Dr. Alireza Moshaverinia. Dr. Moshaverinia states that the cells are capable of boosting a host’s immune system by actively interacting with the immune cells through direct contact causing an activation or releasing of inflammatory or regulatory signals.

The complex structure of the human T cell served a major hurdle for previous experiments which aspired to create synthetic T cells. The structure of the T cells gives the cells the ability to deform to as small as one quarter of their normal size. In addition, the T cells also have the ability to grow to almost three times their original size which allows them to overcome the antigens that attack the immune system.

The research team was able to overcome this hurdle by utilizing a microfluidic system. Microfluidics use the submillimeter scale to focus on the behavior, control and manipulation of fluids. The researchers generated a gum-like substance comprised of polysaccharides and water. This substance was generated through the mixture of mineral oil and alginate biopolymer. When the two fluids combined they created microparticles of alginate. Algnate was then utilized to replicate the form and structure of natural T cells.

Although the scientists were able to successfully pioneer the form and structure of the T cell, they still needed to adjust the elasticity of the newly synthesized cell. In order to do so the research team utilized the microparticles of a calcium ion. The cells were placed in a calcium ion bath and the elasticity of the cells was adjusted by changing the concentration of calcium ions in the bath.

The final step of the experiment was to adjust the biological attributes of the synthesized T cells. These attributes would

“We can use synthetic T cells to engineer more efficient drug carriers and understand the behavior of immune cells”

-Dr. Alireza Moshaverinia
(UCLA School of Dentistry)
enable the T cells to be activated to fight infection, penetrate human tissue and release cellular messengers to regulate inflammation.

The process began by coating the T cells with phospholipids, so that their exterior would closely mimic human cellular membranes. Then, through the chemical process of bioconjugation, the scientists linked T cells with CD4 signalers. CD4 signalers are the particles that are responsible for the activation of natural T cells in the attack of infectious or cancerous cells.

The basic unit of life is said to be the cell. There are a diverse number of cells that comprise an organism, one type cell is the T cell. The T cell, named after its development in the thymus, is a type of white blood cell. T-cells are pivotal to the function of the immune system. The T-cells circulate within an organism to scan for cellular abnormalities and infections.

T cells are further categorized into two types of T cells, killer T cells and helper T cells.

Killer T cells as their names suggests destroying abnormal cells. Helper T cells aid in the generation of an immune response.

Some of the major functions of the T-cells include: scanning the intracellular environment for foreign invaders, directly killing the virally or bacterially infected cells, naturally eradicating cancer cells, activating and helping other immune cells that ingest germs of that make anti-infection molecules called antibodies, and to remember an infection that they may have previously encountered. The cells have also been found to contain unique receptors which allow them to respond to virtually any antigen in the body.

Studying T cell is essential to the recovery of those who may be suffering from illnesses such as cancer and autoimmune diseases.

The experiment can be useful for the generation of various other types of artificial cells, such as natural killer cells or microphages. This can than lead to treatments on specific diseases that negatively impact these cells.
On September 16, 2017, the category five hurricane, Hurricane Maria, devastated the inhabitants of Puerto Rico and Dominica. Hurricane Maria is regarded as being the worst natural disaster on record to affect these countries. It also ranked as the tenth most intense Atlantic Hurricane on record.

Although the hurricane ended on October 2, 2017, it continued to have a detrimental effect on the populations of Puerto Rico and the Dominica. It exposed the residents of these countries to foodborne, waterborne, infectious and non-infectious diseases. As of December 9, at least 146 people were confirmed killed by hurricane, the majority being from Puerto Rico. Aside from health damage, the countries also faced mass destruction in forms of communications. The severe electrical outage caused residents to have no access to internet, social media or television.

Ashley Andujar, a health communication specialist from the center for disease and control and presentation, developed five lessons that she learned from her time in Puerto Rico. Andujar was a part of the first team of four health communication specialists who arrived on the island three weeks after the hurricane.

Andujar suggest developing key messages when encountering a population that has undergone a natural disaster. Although every natural disaster is unique in the way it effects a nation, Andujar argues that there are a number of key messages that can be written before a disaster strikes so that they can be quickly disseminated before an event, during the response and in the recovery stages. This method is known as the phased approach and it has been known to save valuable time when in the midst of a crisis response.

The second lesson Andujar has learned is identify new communication channels. As
previously mentioned the severe electrical outage caused primary communication systems to fail. This challenged Andujar and her team of communication specialists to develop new communication channels. For Hurricane Maria, the team was able to communicate by utilizing printed material. Important health messages were mass printed and distributed to the most vulnerable communities. As the responses evolved, the team was able to identify alternative forms of communications. These included utilizing FEMA’s text messaging capabilities, and posting on the CDC en Español Facebook channel.

Andujar also shines light on the impact cultural norms may have on rescue efforts. She states that cultural norms influence how people perceive and retain information. For their response, the team translated the material to Spanish and made sure to linguistically and culturally tailor their health prevention messages so that they would be relevant with the Puerto Rican audience. They did so by incorporating terminology that was widely utilized on the island. The simplicity of language has a profound effect on the rescue mission as it provided clear and localized language which could be easily understood by audiences with low literacy.

Ashely also suggests an increase in collaboration between different organizations when conducting a rescue effort. She states that collaborating with the Puerto Rico Health Department was essential to reaching out to the most vulnerable communities, including those with no access to clean water, and people who were still in isolated and rural areas. Through the partnership the two organizations were able to distribute over 1.6 million copies of printer materials in a 3 month period. The materials contained crucial information regarding food and water safety, carbon monoxide, vector control, mold and leptospirosis.

Lastly, Andujar states that in order to effectively handle any health related crisis it is essential to integrate with the communities in danger. Andujar states that her team attended more than 130 community events which not only allowed them to disseminate information to the public but also helped paint a picture of the hardships survivors were facing.

Through Hurricane Maria, Andujar and her team aspire to better public health not only when during a national disaster.
National Volunteer Appreciation Week

Celebrating National Volunteer Week
THANK YOU TO ALL OUR VOLUNTEERS!

National Volunteer Appreciation Week at UCLA took place during the week of April 15-21. National Volunteer Week was first established in 1974 and continues to grow exponentially every following year. The week is seen as an opportunity to celebrate the power of volunteers who come together to tackle challenges that plague the communities they live in. The week was filled of festivities hosted by the Volunteer Center to honor the hard work of diligent volunteers.

UCLA states that the idea of giving back to the community is a part of the True Bruin identity. The ideal is definitely very well practices among Bruins, as students, faculty, staff, parents and alumni participate in various causes throughout the year.

The Volunteer Center Staff showcased their support for campus organizations by creating gift baskets filled with sweet treats, healthy snacks, and personal thank you cards. In addition, our very own Care Extenders were also appreciated by the Volunteer Services Department at the Medical Centers as volunteers were offered sweet treats for their service to UCLA Health.

The volunteer center offers unique volunteering opportunities throughout various aspects of the community, whether they be events that serve the homeless or volunteer projects that help plant community gardens. UCLA Health also offers various opportunities to volunteer within the healthcare setting, some of which include the Care Extender Program, the Nursing Volunteer Program, the Creative Arts Program and the Student Volunteer Program. The Volunteer Center encourages those who are not involved to take an active role in their community, one service event at a time. The impact that can be made can serve to be beneficial to not only the population that is being served but to also volunteers themselves.

Ronald Reagan Information desk volunteers
Photo courtesy: www.uclahealth.org

Student volunteer
Photo courtesy: www.uclavolunteercenter.org
What feeling young can say about your brain

We often hear the statement that “I am still young at heart”. A recent study showcases that there may be more truth to the statement than was previously discovered. The study found that people’s “subjective age”, rather than their objective can accurately predict how young their brain really looks.

The study is published in the open-access journal, *Frontiers in Ageing Neuroscience*, the first of its kind to discover a link between subjective age and brain aging. The results of the study have implications that elderly people who feel older than their age should consider caring for their brain health.

The study was first launched in the Seoul National University located in Korea. Dr. Jeanyung Chey of the university asked the question of whether subjective age is just a feeling or attitude, or does it actually reflect how our bodies are actually aging? Chey arrived to this question after various instances of noticing that some people claimed to feel younger and older than their real ages. Chey also pondered upon the effectiveness of depressive states, personality differences, and physical health. However, Chey found a knowledge gap in using the brain aging processes as a possible difference in subjective aging.

It has been found that people frequently experience some cognitive impairment as they age. The brain shows a variety of age-related changes that are reflective of declining, neural health, which includes reduction in grey matter volumes. Recently developed techniques have allowed researchers to identify brain features associated with aging, to provide an estimated brain age.

These techniques were utilized in the study by Chey and her colleagues. The study was conducted by utilizing MRI brain scans. The scans were done on 68 healthy individuals whose ages ranged from 58-84 years. Once the data was collected, the scans were analyzed by looking at the volumes of grey matter in various regions of the brain. The researchers utilized this data to calculate estimated brain ages for the participants.

Grey matter is a major component of the central nervous system. Grey matter consists of neuronal cell bodies, dendrites, axons, glial cells, synapses and...
Grey matter is distinguished from white matter by the fact that grey matter contains numerous cell bodies and relatively fewer myelinated axons. The color difference arises due to the whiteness of myelin.

The researchers of the study hypothesize that those who feel older may be able to sense the aging process in their brain, as their loss of gray matter may make cognitive tasks more challenging. The researchers still need to do a long-term study to better understand and validate this hypothesis.

The participants were also asked to complete a survey, which included questions on whether they felt older or younger than their age. Additionally, the survey also included questions which assessed the cognitive abilities and perceptions of overall health of the participants. It was found that people who felt younger than their age were more likely to score higher on a memory test, considered their health to be better and were less likely to report depressive symptoms. Similarly, those that felt younger than their age showed increased gray matter volume in key brain regions.

The research team also states that the study conducted posed several limitations. Some of the limitations mentioned included, the lack of accuracy within their age predicting model, excessive screening procedures, and having a course measurement for scientific age. In future studies, the researchers aspire to question both the aspects of social influence and of the internal awareness of subjective age separately.

However, at the present the study raises the awareness of lifestyle among those who feel older than their age. Chey advises that, "If somebody feels older than their age, it could be a sign for them to reevaluate their lifestyle, habits, and activities that could contribute to brain aging and take measures to take better care for their brain health. On the other hand maintain younger subjective age may also lead to a healthier brain."
Care Extenders of the Rotation

Thank you! We appreciate your service and recognize your outstanding performance and dedication to the Care Extender Program!

RONALD REAGAN MEDICAL CENTER

- PICU
  - Zarina Wong
  - Adam Guemidjian
- PEDS-A
  - Andrew Min
- PEDS-B
  - Dayanna Ramirez
  - Jennifer Ferrin
- 7 East
  - Nicole Lewis
  - Michelle Chernyak
- 8 East
  - Felicia Fong
  - Fatima Iqbal

SANTA MONICA MEDICAL CENTER

- Surgery Center
  - Sarah Mercado
- ER-B
  - Arielle Schwitkis
  - Brittany Wolff
- Ortho
  - Jaybree Lopez
  - Ivette Duran
- Greeters-A
  - Melody Wang

If nominated by your Department Coordinator as Care Extender of the Rotation two or more times, you will be eligible for a letter of recommendation! 😊