

## College of Health Sciences Newsletter

# PUTTING TATTOOS TO THE TEST



**Tattooing effect on experimental mouse:** Twenty-four hours after tattooing using blue fluorescent ink on the left shoulder of a mouse, its axillary lymph node, left, and spleen, right, were found loaded with blue fluorescent ink as seen under an ultraviolet light.

RESEARCHER TAKES MORE THAN  
SKIN-DEEP APPROACH TO STUDYING  
THE BODY-ART RAGE

## Dean's Message



Dean Shelley Mishoe

### From two special professors, an everlasting impact

It is a time of sadness and reflection in our college as two of our professors have left this world and left a void in our lives. Last month's newsletter had a fitting tribute to Professor Jim Neff, who died suddenly after a brief hospitalization. This month's newsletter honors Professor Michele Darby, who died after an extended illness that she heroically battled. Recently, others in our college have dealt with the death of family members and friends. The loss of our accomplished colleagues, family and friends gives us pause as we reflect on our own lives, the meaning of life, the impacts we have on the lives we touch, and the work that we do on behalf of others at the College of Health Sciences. These moments are reminders that we need to cherish our lives, our loved ones and all that is good in the world. In honor of Professors Neff and Darby, as well as the personal losses some of us have recently experienced, my message for this month's newsletter is captured in this poem:

#### Life

Life, believe, is not a dream,  
 So dark as sages say;  
 Oft a little morning rain  
 Foretells a pleasant day:  
 Sometimes there are clouds of gloom,  
 But these are transient all;  
 If the shower will make the roses bloom,  
 Oh, why lament its fall?  
 Rapidly, merrily,  
 Life's sunny hours flit by,  
 Gratefully, cheerily,  
 Enjoy them as they fly.

What though death at times steps in,  
 And calls our Best away?  
 What though Sorrow seems to win,  
 O'er hope a heavy sway?  
 Yet Hope again elastic springs,  
 Unconquered, though she fell,  
 Still buoyant are her golden wings,  
 Still strong to bear us well.  
 Manfully, fearlessly,  
 The day of trial bear,  
 For gloriously, victoriously,  
 Can courage quell despair!

-- Charlotte Bronte

*Shelley C. Mishoe*

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## From the Editor

# Community praises an unsung hero

On a chilly evening on Friday the 13<sup>th</sup> of February, I hopped in my car and headed to Newport News from the office. Despite the date, this would be an evening of good fortune to be sure.

You see, one of the perks of my job is to witness a bit of history from time to time. I get to see the giving side of humanity at its finest, and on this wintry night, such would be the case.

I exited Interstate 664 and made a right on Jefferson Avenue. I had arrived in the Southeast Community of Newport News. I'd been to many a tough neighborhood in my day, and this one had all of the symptoms. There are dilapidated buildings, the occasional fast-food joint, and pawn shops. The police station is one of the few nice buildings. And not a grocery store in sight. I had arrived in what is called a food desert: a depressed area where healthy food options are extremely scarce or nonexistent.

Southeast Newport News is more than 70 percent African American, and has a median household income of \$27,851 with almost 40 percent of its population below the poverty level, according to 2011 figures. But it's a community that has pride in spite of its problems.

Dr. Anna Jeng, an associate professor with the School of Community & Environmental Health, is more than familiar with Southeast's pride. She arrived there about four years ago and joined forces with community leaders to found the Southeast Care Coalition. From that point on, she has worked to get the community grants to help its residents tackle environmental degradation and the associated health issues that have plagued the area for decades.

Old Dominion University bestows the John R. Broderick Diversity Champion Award upon "meritorious individuals who actively promote values associated with diversity, inclusion and equity." This year's winner would be Dr. Jeng, and what more fitting a place for a surprise presentation than in the company of the coalition who nominated her.

When I arrived at the Moton Community Center that night with my camera, Dr. Jeng could sense something was odd. Nonetheless, she introduced me to members of the coalition. The reception was warm and I felt the strong sense that they all regarded her as family. Such is the trust and respect that a potential outsider builds through several years of commitment and service.

When she received the award, she was appreciative but extremely humbled. "This isn't for me; this is for them," she said.

Linwood DeBrew, executive director of the Greater Southeast Development Corp., wrote the nominating letter and was on hand for the presentation. He was all smiles.

His letter summed up what Dr. Jeng has meant to the community over the years. He closed it with:

"We are extremely grateful for Dr. Jeng's caring on our behalf that extends above the call of duty. She is a true friend and a great asset to the people of the Southeast Community."

Well put, and well deserved.



Irvin B. Harrell, Coordinator  
of Strategy & Marketing



Dr. Anna Jeng, associate professor with the School of Community & Environmental Health, poses with Linwood DeBrew, the executive director of the Greater Southeast Development Corp., after receiving the John R. Broderick Diversity Champion Award.



**Michele L. Darby (1949-2015)**

## Former Dental Hygiene chair spent life teaching, inspiring

Michele Leonardi Darby - a former Old Dominion University Eminent Scholar and Professor who also served as chair of ODU's Gene W. Hirschfeld School of Dental Hygiene - died Thursday morning (Feb. 5) after an extended illness.



Michele L. Darby

Darby retired from ODU in 2013. The same year she was awarded the Dimensions of Dental Hygiene's Esther Wilkins Lifetime Achievement Award, which is given by Dimensions of Dental Hygiene and is sponsored by Colgate.

Darby lived in Virginia Beach with her husband Dennis. They have a daughter, Devan; and son, Blake.

"It is with great sadness that the College of Health Sciences, the School of Dental Hygiene and I mourn the passing of Michele Darby," said Shelley Mishoe, Dean of ODU's College of Health Sciences. "She has been an inspiration to so many people throughout her life in her many roles as dental hygienist, professor, department chair, Eminent Scholar, author, researcher and mentor. Michele flourished in all of these roles, but none as much as her cherished role as wife to Dennis and mother of Devan and Blake. Our hearts go out to the entire Darby family during this time of tremendous loss of someone so special that has left a remarkable legacy of accomplishment and caring."

Darby received her Bachelor of Science and Master of Science degrees from Columbia University, in New York. She arrived at ODU in 1974 as an assistant professor at the School for Dental Hygiene, a position she held for a decade. Thus began her celebrated career at the university.

In 1982, Darby became chair for the College of Health Sciences School of Dental Hygiene. Due to her exemplary merit and service to ODU, Darby was named an Eminent Scholar in 1989 and also became the graduate program director for the School of Dental Hygiene.

In addition to the lifetime achievement award, Darby received numerous accolades during her career, including: the Rufus Alan Tonelson Distinguished Faculty Award in 1991, the Virginia State Council on Higher Education's Outstanding Faculty Award in 1993 and the Excellence in Teaching Award from the ODU College of Health Sciences in 2007. She was named University Professor in 1999.

Darby was known for her attention to detail in classroom instruction, her writings and mentoring. She wrote three major textbooks, in addition to more than 50 peer-reviewed publications on dental hygiene. She also emphasized the responsibilities dental hygiene professionals have globally. Darby led by example.

In 1981, she visited the People's Republic of China as part of a pioneering delegation of visiting professionals who shared dental hygiene concepts and techniques with Chinese dentists. As a Fulbright Scholar in 2010, she spent six months in Irbid, Jordan, at the Jordan University of Science and Technology, working to improve standards of education and practice.

Darby's work in Jordan earned her the 2011 Distinguished Alumni Award in Dental Hygiene from the University of Pittsburgh School of Dental Medicine - the same year she received ODU's Shining Star Award, which is given to faculty members who demonstrate evidence of helping students succeed academically, professionally and personally inside and outside the classroom.

There will be a Celebration of Life Service for Darby on Saturday, April 25, from 1-3 p.m. at the University Theatre in the College of Health Sciences Building.

## Researcher looks beneath the skin on tattoo risks

By Irvin B. Harrell

The next time you sit in an ink-slinger's chair for a tattoo, you might want to consider what you're putting into your body, says Dr. Sunil K. Joshi, an assistant professor of cellular immunology at Old Dominion University's School of Medical Diagnostic & Translational Sciences.

Mercury. Lead. Titanium. Copper. Carbon. These are but a few of the ingredients in the ink that tattoo artists use to paint bodies. Despite the toxic nature of these elements, they are not regulated by the Food and Drug Administration or any federal agency.

"Not only are the pigments they use not regulated, but the chemicals used to deliver these pigments to the skin are considered trade secrets," Joshi says. "They could be alcohol, methanol, antifreeze, formaldehyde."

Tattoos are big business and are continuing to make a more lasting impression on society each day. An art form that was once more common for bikers, sailors and gang members, now has found a profitable niche among famous athletes, film and music stars, and regular Joes and Janes. Take a walk around Hampton Roads and you're bound to run into someone with an exposed tattoo in no time flat.

America spends \$1.6 billion a year on tattoos, according to 2013 study by the Pew Research Center. It estimated the total number of Americans with at least one tattoo at 45 million. There are 21,000-plus tattoo parlors in the United States. Tattoo artists can make upwards of \$150 an hour on average for a large tattoo, the study says.

The FDA has warned of infection, allergic reactions, granulomas and removal problems with tattoos. However, it does not list cancer as a potential risk, Joshi says, even though the carbon used in black inks is a carcinogen.

In German studies performed on human cadavers with tattoos, most of the ink was found in the lymph nodes, which help to protect against infection by killing bacteria and neutralizing toxins.



The nanoparticles in tattoo ink are absorbed into cells through phagocytosis, a defensive mechanism against infection or the invasion of foreign substances. Leukocytes, or white blood cells, then take the nanoparticles to neighboring lymph nodes, where the ink collects and cannot be metabolized.

"What I plan to look at is the effect of the ink on the immune system," Joshi says. "Eighty percent of the ink that is injected does not end up in the tattoo, but instead accumulates elsewhere in the body."

His research project will attempt to determine whether tattoos pose a significant threat to public health by suppressing the immune system and leaving the body vulnerable to "opportunistic infections."

"It is a public health issue, because a person whose immune system is not functioning properly can allow for a virus to mutate and threaten others with a different, more resistant strain of the virus," Joshi says.

With no regulations, tattoo inks may contain chemicals that not only can cause mutations in infectious viruses, but birth defects or aggressive cancers, Joshi said.

## Researcher looks beneath the skin on tattoo risks (continued)

Joshi has done some preliminary tattoo tests with lab mice. After injecting them with tattoo ink in the foot, the mice were euthanized. A necropsy revealed the migration of ink particles to nearby lymph nodes.

One of the frustrating aspects of Joshi's research, he says, is that there is nothing that can undo the potential damage once the tattoo is applied.

"Tattoo removal doesn't remove anything," Joshi says. "It merely masks the tattoo."

And the process can be very expensive, painful, in some cases ineffective, and is not covered by insurance, he added.



Human lymph node loaded with black Tattoo Ink  
Courtesy Lehner et al. (2014) PLoS ONE 9(3): e92787]

About a year ago, Joshi noticed that one of his laboratory staff members had a tattoo of a DNA strand running down her neck. He inquired about it and in an effort to further satisfy his curiosity, he did a Google search on tattoos.

He found the German cadaver study and a light went off.

"I realized that there was an urgent need for an extensive research investigation on the short-term and long-term health effects of tattooing," Joshi says.

Joshi says he understands that his findings may not receive a warm reception by some, but finding the truth is far more important.



## Dental Hygiene weekend takes Beach by storm



Assistant Professor Ann Bruhn



This month, the Gene W. Hirschfeld School of Dental Hygiene held its 2015 Continuing Dental Hygiene Education Winter Weekend at the Sheraton Oceanfront Hotel. The three-day event featured five scientific presentations and drew more than 200 participants.

Assistant Professor Ann Bruhn was the coordinator of the event and also served as the master of ceremonies.



## Honor student presentation

Sareena Khosla, a School of Nursing student, gave a presentation this month on “The Impact of Nurses during World War I,” at an undergraduate Research Symposium. Khosla is an honor student.

## School of Nursing doubles as movie set

Lights! Camera! Action!

The College of Health Sciences served as a movie set this month for the yet-to-be-release romance “Jess & Naomi.”

With the cooperation of School of Nursing Chair Karen Karlowicz, the crew from Virginia Filmworks and Regent University spent a weekend filming a hospital scene here. The college provided a great opportunity for the production, given the red tape associated with filming in an actual hospital.

“The film crew and their equipment were spread throughout the second floor of the Health Sciences Building, using classrooms, student group rooms, and nursing clinical skills and assessment labs,” Karlowicz said. “Thank goodness this all took place on Sunday as they took over the space.”

The movie was written by Sean Gaffney, a local playwright, screenwriter, director and producer. He also is the director of the Script & Screenwriting Program at Regent University in Virginia Beach.

Corbin Benson and Marilu Henner are among the cast of “Jess & Naomi.”

Between helping coordinate with the set and props, Dr. Karlowicz spent some time in the office working. And she also had an opportunity to meet and greet Henner.

“As I learned during this film shoot, movie-making is a painstaking process,” Karlowicz said. “There are many, many persons involved in doing a variety of different jobs, all focused on filming a scene just right.”

The experience could mean more such opportunities down the road. Karlowicz says she would welcome future ventures.

“I was pleased to let the crew use the School of Nursing simulation lab to film their hospital scenes,” she said. “For Dr. Lynn Wiles and myself, it was also a chance to serve as medical consultants to the crew to help them ensure the realism of the images being filmed. The experience was very positive and we would be willing to assist again if asked.”



Dr. Karen Karlowicz, chair of the School of Nursing, poses with actress Marilu Henner during a recent movie filming that took place at the College of Health Sciences.



## Global Health Corner

# Measles continues to menace the U.S.

Measles is a highly contagious disease caused by the measles virus and spread by droplets or direct contact with secretions of infected individuals. Measles has been a nationally notifiable disease in the United States since 1912. After the measles vaccination was introduced and widely implemented in the nation, measles was declared eliminated from the United States in 2000. Unfortunately, the measles has made a strong re-emergence in the U.S. and can potentially impact Virginia, according to the Centers for Disease Control and Prevention (CDC).

From 2009 to 2014, there have been 13 reported cases of measles in Virginia. Six of these individuals were unvaccinated, and five were not fully vaccinated. To date, there have been no cases of measles reported in the state this year. However, a measles outbreak could still be a potential risk for Virginians. One reason is that only 88.6 percent of children in Virginia have received the measles vaccine by age 2 which is a very low percentage compared to national percentages. Compounding the risk, Virginia allows for an exemption from required immunizations for religious and/or medical reasons.

Since 2001, there have been five noticeable outbreaks in the U.S.: 2008, 2011, 2013, 2014 and 2015. In 2008, the U.S. experienced three large measles outbreaks totaling 140 cases as a result of the spread in communities with large numbers of unvaccinated people. In 2011, most of the 118 cases of measles brought to the United States came from France, both from U.S. residents traveling abroad and foreign visitors. In 2013, 159 cases of measles were reported from 11 different outbreaks.

In 2014, the U.S. had 23 measles outbreaks with a huge outbreak among unvaccinated Amish communities in Ohio and from U.S. residents returning from a trip to measles-stricken Philippines. Currently in 2015, the nation has reported 121 cases in 17 states and D.C. linked to an amusement park in California.

This graph shows the measles trend in the U.S. from 2001 to January 2015.

## Global Health to hold information session

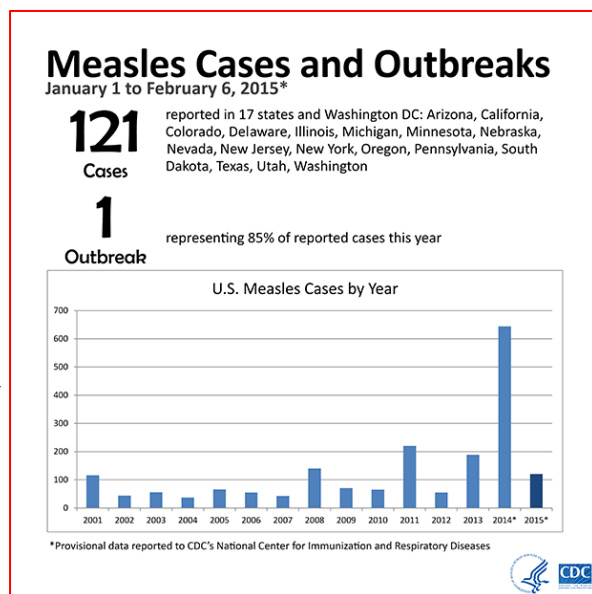
The Center for Global Health cordially invites you to attend an informal information session about Graduate Certificate in Global Health. Global health issues are increasingly relevant in every field from public health to engineering, business, education, communication and social science. This information session will provide the opportunity to learn more about the certificate program such as the requirement for enrollment, how to enroll as well as the benefits of obtaining the certificate. The Global Health Certificate is open to all disciplines.

Location: Suffolk room located in the Web Center

Date: Friday, March 20

Time: Noon – 1:00 p.m.

Pizza will be provided. If you are interested in attending please RSVP to [jredmond@odu.edu](mailto:jredmond@odu.edu).



## Interprofessional Education Corner

### Looking for the perfect match



The Colleges of Education and Health Sciences CORE2 (Committing Our Resources to Excellence through Equity) Taskforces held a mentor-matchmaking event this month at ODU's Innovation Research Park II. The event provided an opportunity for junior faculty to identify and connect with senior faculty mentors to help them with such tasks as writing grant proposals and getting published.

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### Get your proposals ready for IPE

The guidelines for 2015 IPE Award have been released. This award will recognize College of Health Sciences faculty members and students who submit innovative ideas for college-wide interprofessional education activities and/or projects.

The World Health Organization defines interprofessional education as “when two students from two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes.”

Proposals must present ideas for promoting IPE through college-wide activities and/or projects. Proposals should highlight the 1) innovativeness, 2) feasibility and 3) applicability of the idea in the context of health professions education. Questions about the IPE Award guidelines may be directed to Professor Denise Claiborne, Chair, IPE Award Sub-Committee @ [dclaibor@odu.edu](mailto:dclaibor@odu.edu).

Awardees will be announced at the 2015 IPE Day. The event will be held on Friday, April 3, at the Ted Constant Center. Author and motivational speaker Julia Fox Garrison is the keynote speaker for the event. Check out the video of Julia Fox Garrison's interview on “Good Morning America, Profiles in Courage.” <https://www.youtube.com/watch?v=DZrXYkaPND0>

*We roar with IPE at ODU.*

## Staying in shape

The School of Medical Diagnostic & Translational Sciences students and faculty have been involved in running, walking, and now weekly circuit training with three majors represented. Pictured center are Dr. Linda Bennington (Nursing), Dr. Dawn Riddick (PT), and Dr. Somma (MDTS) with his student Tiffany Tuggle. They are represented with their personal trainers, all active competitors and champions. (L-R), Joe Hartfelder, Shasha Greve, Erika Peshek, and Dion Bruton, the owner of the HOUZE of Champions.



## March Calendar

- 9-14 Spring Break
- 20 Center for Global Health Graduate Certificate Information Session, Noon –1 p.m.  
Location: Webb Center, Suffolk Room
- 25 & 28 Continuing Education Course: Dental Radiation Safety Certification  
Location: 2113 Health Sciences Building