ALBANY COLLEGE OF PHARMACY AND HEALTH SCIENCES

PRESIDENT'S REPORT

HOW WE WILL

"A THRIVING ACPHS CLAIMS THE SPACE AT THE INTERSECTION OF THE BASIC SCIENCES, CLINICAL SCIENCES, AND POPULATION HEALTH SCIENCES."

GREG DEWEY, PH.D.
PRESIDENT

THRIVE

THESE ARE CHALLENGING TIMES FOR COLLEGES AND UNIVERSITIES.
The combination of rising operational costs and anemic enrollment growth have forced many schools to take actions that a few years ago were unthinkable. These range from workforce reductions to the elimination of academic programs and, in some cases, mergers or closures.

At ACPHS, we are fortunate to have a tradition of fiscal control that gives us a strong foundation to withstand the current pressures on academia. We also are fortunate to have a history of student success that presents our students with strong career opportunities and has led to ACPHS graduates earning salaries that are currently ranked third highest in the country on the College Scorecard.

We are, however, not immune to the forces reshaping higher education. As we determine the path forward in this increasingly competitive landscape, it is not sufficient to consider how we will survive as an institution. Rather, we must think instead about how we will thrive.

This is an especially opportune time for us to consider how we move to the next level.

The basic sciences continue to move forward at an unprecedented pace, expanding our knowledge of human biology at the biochemical, cellular, and organismal levels. The growth of our knowledge on complex disease states continues unabated.

The historic advances in the basic sciences come at a time when we are also seeing an incredible impact of technology on the clinical and population health sciences.

Medical devices and diagnostics are being developed that can monitor the physiological state of a patient in real-time, providing a comprehensive snapshot of an individual's state of health. These developments, in combination with a deeper understanding of genomics, are accelerating the mainstream adoption of precision medicine. Rapid genotyping technologies are bringing the promise of pharmacogenomics (tailoring a therapy to an individual's genetic makeup) within reach.

Information technology and informatics are also ushering in a new era in population health sciences where electronic health records can be mined to better understand the efficacy of treatments over large patient populations. But these big data approaches can do more than give us insights into efficacy. They can also introduce economics into the process and ultimately help determine how to balance the best therapy with cost effectiveness.

These are not short term trends that will quickly fade away. The future of medicine and health care practice will be driven by the integration of the basic sciences, clinical sciences, and population health sciences. To be successful, our students must experience coursework and a research environment that integrates all three into robust programs of study.

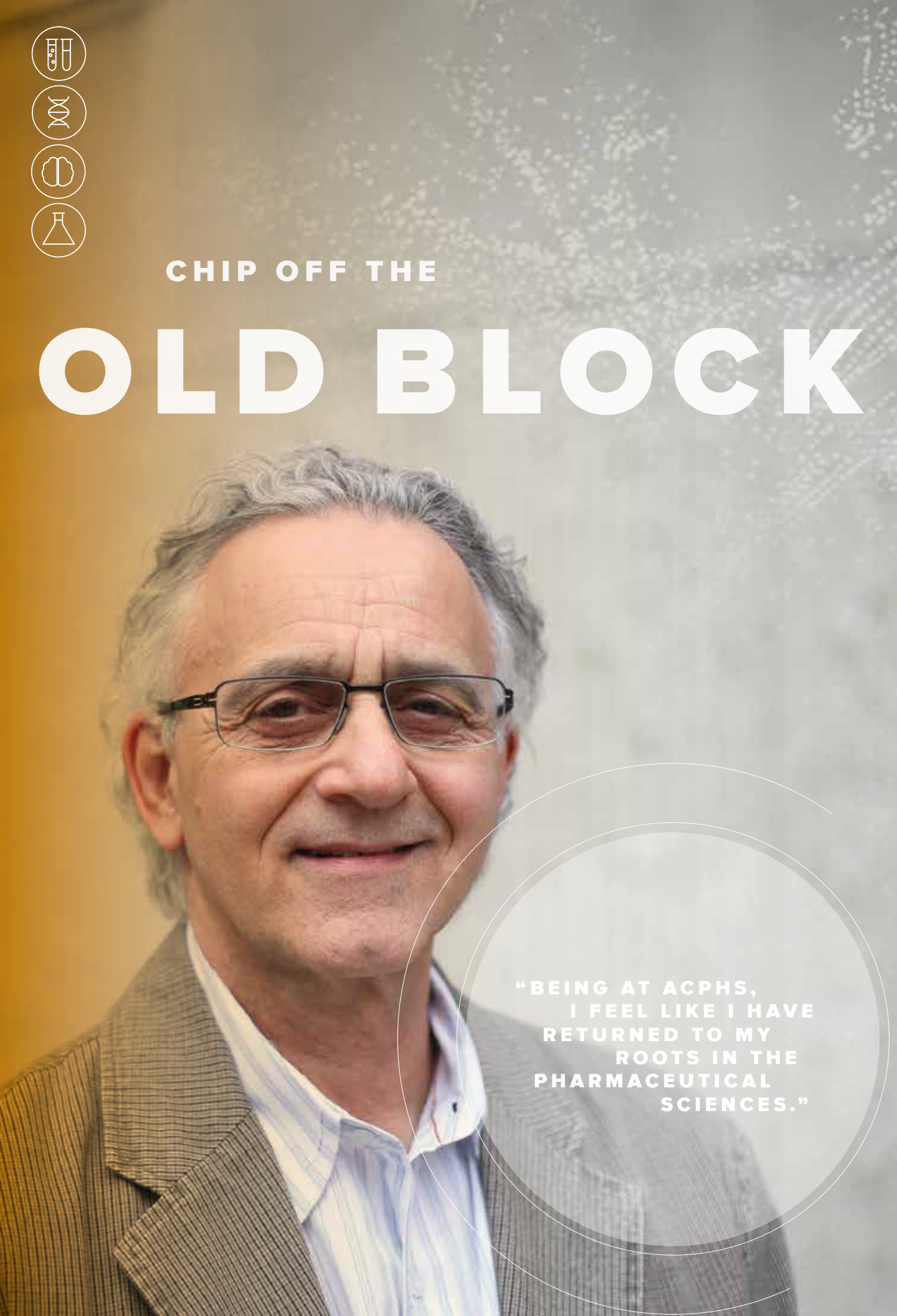
In the following Report, you will find articles highlighting people, projects, and programs that are advancing us in this direction. You will also "listen in" on a roundtable discussion about cancer that illustrates how knowledge from each of these core areas contributes to our understanding of this complex disease and our pursuit of a cure.

So what does a thriving ACPHS looks like? It is an institution that claims the space at the intersection of the basic sciences, the clinical sciences, and the population health sciences – both in terms of research and education.

We are educating the next generation of health care problem solvers, and we need to equip them with the tools for success. We are looking to thrive in an evolving health care and health science environment, and this requires that we embrace a future where we integrate basic, clinical, and population sciences.

CHIP OFF THE

OLD BLOCK



"BEING AT ACPHS, I FEEL LIKE I HAVE RETURNED TO MY ROOTS IN THE PHARMACEUTICAL SCIENCES."

LIKE MANY SONS WITH REBELLIOUS STREAKS, JIM GALLO, PH.D. was determined not to follow in his father's footsteps. And as often happens in these scenarios, dad had the last laugh. Sort of.

Dr. Gallo is Professor and Chair of the Albany Campus' Department of Pharmaceutical Sciences. He joined the College in 2016 following stops at a number of high profile universities and research institutes, but his path here was anything but predictable.

He grew up in Wisconsin where his father owned and operated Gallo's Pharmacy. He spent a lot of time in the pharmacy where he helped out as a stock boy and ran errands, but he never envisioned a career for himself in pharmacy.

He would eventually enroll as a student at the University of Wisconsin, but after three years he decided it was time for a change. He had accumulated 90 credits, including an impressive number of courses in math and science, but he felt like he was "drifting."

"I had piled up all of these credits, but practically speaking, I didn't have a major. I knew what pharmacy was about, and I thought that might give me the focus I was seeking. I had a friend who went to Boston College, so I decided to move to Boston and enroll at Massachusetts College of Pharmacy."

After earning his pharmacy degree, he returned home to work in his father's pharmacy. But he couldn't shake the idea of pursuing a career in clinical pharmacy after "catching the bug" as a student at MCP.

He enrolled at the University of Florida, one of the few schools at the time to offer a Doctor of Pharmacy program, which existed then only as a post-baccalaureate option. He quickly fell under the wing of some faculty members doing research in pharmacokinetics. Almost immediately something clicked for him. "I knew in my first year at Florida that I wanted to do my Ph.D. in this field," he says.

That's exactly what he did, earning his Ph.D. in pharmacokinetics from the University of Arizona before heading to the University of Georgia as an Assistant Professor. It proved to be a good entrée point into academia, but he left after seven years in pursuit of a more research intensive environment.

He found that at Fox Chase Cancer Center in Philadelphia where the seeds would be sown for the rest of his career work. "At the time, there were 70 primary investigators working at the Center. I had my own grants, but I was also able to collaborate with physicians doing phase one clinical trials. It was the ideal environment for a young researcher like myself."

While working at the University of Georgia, Dr. Gallo had collaborated with a faculty member on a number of grants related to anti-HIV drug research. "One of the concerns about anti-HIV drugs is do they get into the brain. I started to become more interested in this area, and since I was working in a cancer center, I thought I should also be studying brain tumors," he says.

He subsequently did a sabbatical with a brain tumor doctor at Northwestern University, and he has largely dedicated himself to the study of brain cancer ever since, having completed three NIH grants in this area in the past four years.

Dr. Gallo's research utilizes a number of the same assays that are used for drugs for other cancers, but he also screens for blood-brain barrier penetration, a critical factor in the efficacy of brain cancer drugs. "If we have a promising drug, we do a pre-clinical model in a mouse to look at the pharmacodynamics and pharmacokinetics. Unlike many other programs, we then scale our models to humans and make predictions as to how the drugs may behave in the body and which patient populations are most likely to benefit from the drug. This is a form of precision medicine."

Of course, as department chair, he must balance his research projects with his other responsibilities as the leader of a ten person (and growing) department. "I'm working to create an environment that provides faculty with the time and resources they need to develop their research programs. As their research flourishes, that will also mean more opportunities for students in our bachelor's and master's programs in Pharmaceutical Sciences," he says.

There's also the matter of recruiting new faculty and managing the other administrative tasks that come with the position. It's a full plate, but he doesn't seem to mind. "Being at ACPHS, I feel like I have returned to my roots in the Pharmaceutical Sciences," he says. No doubt his father would be proud.

RESEARCH

IF YOU ARE A SCIENTIST DOING RESEARCH ON HUMAN HEALTH, your number one target for funding is likely the National Institutes of Health (NIH).

NIH is the largest public funder of biomedical research in the world, but NIH supported grants are also the most competitive. NIH received 54,220 research project grant applications in fiscal year 2016, with the overall success rate for funding being less than 20%.

Due to the volume of applications and the comparative scarcity of funding dollars, all grants submitted to NIH undergo a demanding peer review process.

The first level of review is carried out by a Scientific Review Group composed primarily of non-federal scientists. The second level of review is typically performed by the relevant Institute and Center National Advisory Councils (NIH is made up of 27 Institutes and Centers), but in some instances, NIH may rely on boards made up of scientific and public representatives.

The rigor associated with the review process means that NIH grants not only carry with them a level of prestige, they serve as validation for the quality and importance of a given research project.

So when two ACPHS faculty members – Associate Professor Meenakshi Malik, Ph.D., and Assistant Professor Tim LaRocca, Ph.D. – were each awarded $480,000 NIH grants within a three-week span in December 2016, it marked an extraordinary accomplishment for the College. It was made even more noteworthy by the fact that Drs. Malik and LaRocca are both members of the same department, the Department of Basic and Clinical Sciences.

The greatest beneficiaries of these grants, however, may be ACPHS students, particularly those in the Bachelor's program in Microbiology and the Master's program in Molecular Biosciences. That is because both grants, which are categorized by NIH as R15's, come with the requirement that the principal investigators use the funding to help "expose students to research."

Dr. Malik's grant is the renewal of a previously funded NIH grant. It will allow her to continue her study of *Francisella tularensis*, a deadly bacterium that has been classified by the Centers for Disease Control as a Category A bioterrorism agent.

Mentoring students is nothing new for Dr. Malik; she has a long history of integrating students into her lab. Over the three-year period of her previous NIH grant, she authored six publications in peer reviewed journals that included *Molecular Microbiology* and the *Journal of Biological Chemistry*. Five different ACPHS undergraduate and graduate students were named co-authors on these publications.

Dr. LaRocca joined the College in January 2015, and this represents his first NIH grant. The focus of his project is to gain a deeper understanding of the process by which red blood cells die, and with this knowledge, work to improve treatments for patients suffering from bacterial blood infections and other blood related disorders.

Dr. LaRocca already had ACPHS students working in his lab, and this NIH grant will enable more students to gain meaningful research experience at both the undergraduate and graduate levels.

As the College continues to build out its capabilities in the Basic Sciences, grants such as these will play a critical role in supporting those efforts while also providing excellent opportunities for students to engage in cutting edge research.

AND DEVELOPMENT

MEENAKSHI MALIK'S AND TIM LAROCCA'S NEW NIH GRANTS WILL HELP TRAIN THE NEXT GENERATION OF RESEARCH SCIENTISTS.

TWO DEGREES ARE BETT

FOR STUDENTS SEEKING TO DIFFERENTIATE THEMSELVES in the eyes of future employers and graduate schools, a master's degree is an excellent option.

Albany College of Pharmacy and Health Sciences introduced its first master's degree program in the late 2000's and now offers five such programs. Each one has been developed as a complement to, or extension of, an existing undergraduate program(s) which means that there are a number of intentional synergies that exist between the various B.S. and M.S. programs.

ACPHS has made the pursuit of a master's degree easier through the availability of four dual degree programs. Dual degree programs allow students to receive a bachelor's and master's degree in five years instead of six – a structure that helps them save both time and money as they prepare for the next step in their careers.

The newest of the College's dual degree programs was introduced in February 2017. It combines a Bachelor's in Microbiology and a Master's in Molecular Biosciences.

This dual degree offering has been designed to provide students with a stronger foundation in research, and includes a research rotation in Year 4 followed by a written thesis and defense in Year 5.

By attending just one extra year of school, dual degree graduates gain a competitive advantage that will not only provide a boost to their immediate post-graduate plans, but may also be viewed favorably as they seek to advance their careers in the future.

It's a combination that is tough to beat which is why an increasing number of students are being drawn to these programs.

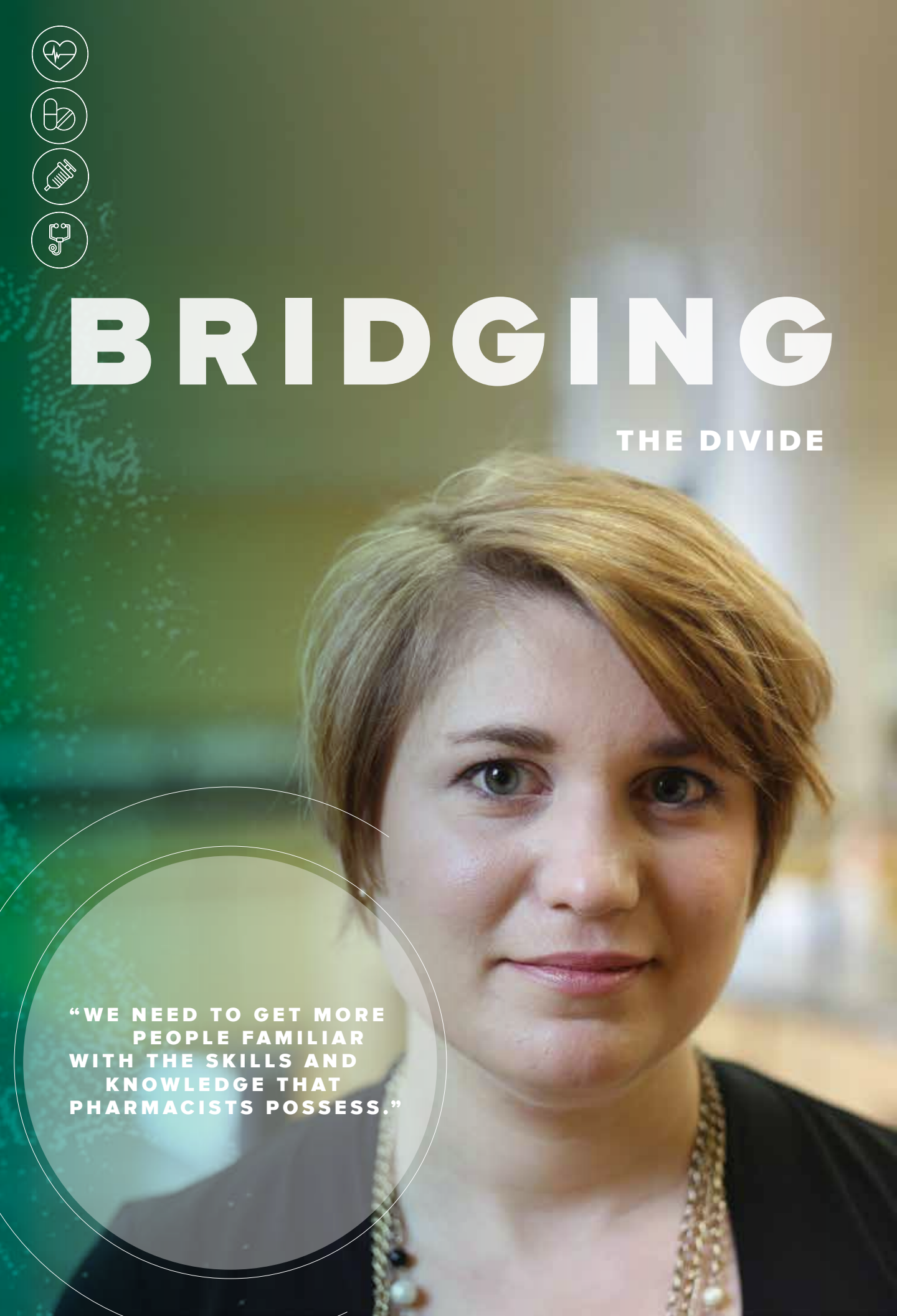
TER THAN ONE

DUAL DEGREE PROGRAMS AT ACPHS

- B.S. in Biomedical Technology / M.S. in Cytotechnology and Molecular Cytology
- B.S. in Biomedical Technology / M.S. in Clinical Laboratory Sciences
- B.S. in Pharmaceutical Sciences / M.S. in Pharmaceutical Sciences
- B.S. in Microbiology / M.S. in Molecular Biosciences

BRIDGING

THE DIVIDE



"WE NEED TO GET MORE PEOPLE FAMILIAR WITH THE SKILLS AND KNOWLEDGE THAT PHARMACISTS POSSESS."

ON ANY GIVEN DAY, ASSOCIATE PROFESSOR OF PHARMACY PRACTICE KATIE CARDONE, PHARM.D., BCACP, may be found working with chronic kidney disease patients, conducting medication therapy management consultations, developing online courses for the College's nephrology concentration, publishing articles, delivering presentations, precepting students, and more. All of which makes it hard to believe that it took three years of school to convince her that pharmacy was the right career choice.

"I had been asked by my high school guidance counselor to consider pharmacy, but at the time, I was leaning towards engineering. My image of what a pharmacist did was the shopkeeper in the Norman Rockwell painting. That wasn't something that appealed to me, which is why ACPHS was the last school I visited when I was looking at colleges," she says. But when she arrived on campus, she found herself attracted to the close-knit feel of the College and the strong focus on science, which is a hallmark of the pre-pharmacy curriculum. She decided to enroll.

Despite positive early experiences at the College, she considered transferring after each of her first two years. Everything changed after her third year when she began working as a pharmacy intern at Price Chopper. "I really enjoyed the opportunity to work with patients in a community setting. It was also interesting to watch the transition between basic sciences and clinical applications play out in the pharmacy. I liked that bridge."

From that point on, there was no turning back. With her commitment to ACPHS and her career path now solidified, Dr. Cardone immersed herself in the College and her future profession. She joined the soccer team, worked in the research lab of Professor Bob Levin, and applied for the Early Patient Oriented Care (EPOC) program, which is where she developed her interest in nephrology.

"Before starting the program, students were asked to rank the areas of interest to them. I put dialysis last on the list, and, of course, that's where I ended up," she laughs. "[Professor] George Bailie said to me, 'It's a good character builder to get up at 6 am and go to dialysis.' I had my doubts, but by the end of my third semester in the program I had developed a real interest in nephrology."

Following graduation, she did a two-year fellowship in nephrology with Dr. Harold Manley, a former ACPHS faculty member. "The fellowship was the synthesis of my previous experiences in community pharmacy, nephrology, and research. It combined everything that I enjoyed doing. It's what ultimately led me to academia because I saw it as the best opportunity to continue my involvement in all of these aspects of pharmacy."

Fast forward to the present day and Dr. Cardone is now mentoring her own post-graduate trainees. She started a nephrology pharmacy residency two years ago – one of only two such residencies in the country – and recently received accreditation by the American Society of Health-System Pharmacists (ASHP).

She is also using her research as a platform to bridge (there's that word again) pharmacy with other fields such as Public Health. One such project is a collaboration with Associate Professor Wendy Parker in the ACPHS Department of Population Health Sciences. The two are exploring the impact of pharmaceutical care services such as medication adherence and health literacy on the outcomes of patients suffering from chronic kidney disease. The collaboration has resulted in external grant funding a nd academic publications.

For someone who once had to be sold on the profession of pharmacy, Dr. Cardone has emerged as one of its strongest advocates and a role model for future pharmacists. She believes that the profession has just scratched the surface of its potential, and she hopes to see its profile further elevated in the eyes of the public.

"Within our own profession, we know that we are valuable members of the health care team. But much of the public does not know about the pharmacist's education or what they do beyond dispensing. Even within the health care team, we need to get more people familiar with the skills and knowledge that pharmacists possess," she says. "If we are not vocal about our capabilities and contributions, how will anybody know?"

BREATHING

SCHENECTADY COUNTY IS BATTLING AN ASTHMA PROBLEM, and the Asthma Coalition of the Capital Region is looking to ACPHS, and specifically its students, for assistance.

According to the latest data from the New York State Department of Health, Schenectady County ranks 4th among 57 counties in the state (excluding New York City) with 78.1 asthma emergency department visits per 10,000 residents.

Following the 2016 opening of College Hometown Pharmacy in the Hometown Health Centers clinic in Schenectady, the Asthma Coalition of the Capital Region (ACCR) approached the College for help with its efforts to improve asthma care.

ACPHS Assistant Professor See-Won Seo explains the challenges inherent in asthma treatment: "There is so much that needs to be covered related to asthma devices and medications, and the provider doesn't always have the time to walk through everything with the patient. Having a pharmacist available to follow up and 'close the loop' can go a long way towards improving outcomes with asthma patients."

Through the partnership with ACCR, student pharmacists from the College who rotate through Hometown Health Centers now receive daily reports to help identify patients in the clinic who may benefit from additional asthma counseling. Indicators flagged in these reports may include one or more of the following:

- Recent asthma-related ER visits or hospitalizations
- Asthma Control Test score ≤ 19, indicating poor control
- Failure to pick up controller asthma medications from the pharmacy
- Excessive refills of a rescue inhaler from the pharmacy

Once a patient is identified, the students meet with the patient after regularly scheduled appointments with their provider to review their medications and ensure the patient knows how to properly use their device(s). As part of the meeting, students demonstrate for each patient how their device works and then watch to see that the patient is using it properly. The students also provide disease state education, asthma action plans, and trigger avoidance/identification. Since the program has started, they've already noticed instances where providers have increased dosing when, in fact, the problem stemmed from the patient not taking the medicine correctly.

"The area where we feel there is the most opportunity for rapid improvement is with the development or update of a patient's Asthma Action Plan," says ACPHS Assistant Professor Jacqueline Cleary, whose practice site is in the Hometown Health Centers clinic. "What are the medications they should and should not be taking? When should they know to increase their albuterol based on their symptoms? When is the right time to call the doctor or seek emergent care? Our job is to make sure they know the answers to these questions."

As the program continues to grow, the College plans to integrate 10-15 pharmacy students in their second professional year (P2) to assist with asthma education. When these students become P3's, they will train a new class of P2's and that cycle will be repeated each year.

Dr. Seo would eventually like to see students receive permission to visit patients' homes and shadow Healthy Neighborhoods Program professionals. "Pharmacists tend to focus on the medications which can cause them to overlook factors in the patient's home environment that may be exacerbating their asthma such as smoking or pet dander. When it comes to asthma care, it is important to understand the big picture so that you can ask the right questions and direct the patient to the most effective resources."

EASIER

ACPHS STUDENTS AT COLLEGE HOMETOWN PHARMACY ARE LEARNING HOW THEY CAN HELP REDUCE THE IMPACT OF ASTHMA ON RESIDENTS OF SCHENECTADY COUNTY.


DE

MAND

ON THE RISE FOR LABORATORY PROFESSIONALS

IN THE FIELD OF HEALTH CARE, MUCH time is spent discussing and analyzing treatment. What is the best course of therapy? Is the patient capable of adhering to the therapy? Is the prescribed therapy the most cost effective option? But before any conversation can take place about how to best treat a patient, there first needs to be a diagnosis, and in approximately 70% of situations, a patient's diagnosis is determined after consulting the results of a laboratory test(s).

Advances in technology over the past two decades have greatly expanded the range of tests available to providers. There are now approximately seven billion diagnostic tests performed each year in the United States alone!

As the amount and sophistication of these tests have grown, the need for clinical laboratory science professionals to evaluate and interpret the results has increased proportionately. Yet, despite these developments, the number of academic programs for laboratory professionals has been declining since the early 1990's.

The nation's labs need to fill more than 7,000 jobs annually, but U.S. clinical laboratory education programs are producing approximately 5,000 qualified laboratory professionals each year.

The math is pretty simple. Every graduate from an accredited program is going to have a job offer, and in some cases, multiple offers. As ACPHS looks to the future, its continuing commitment to the laboratory sciences (the College offers both B.S. and M.S. degrees in Clinical Laboratory Sciences, in addition to an M.S. in Cytotechnology and Molecular Cytology) positions it well to help address an important need in the nation's health care system while providing opportunities for students in a field with excellent career prospects.

CULTURE

OF OPPORTUNITY

"CULTURES DON'T JUST HAPPEN. THEY ARE FORMED."

WALK INTO THE OFFICE OF COLLEEN MCLAUGHLIN, PH.D., and certain things strike you immediately – an array of multi-colored post-it notes affixed to the wall, figurines of a tortoise and hare placed conspicuously on her desk, and a sign that says, "Culture eats strategy for lunch."

Dr. McLaughlin joined the College in February 2017 as the founding chair of the Department of Population Health Sciences. Prior to coming to ACPHS, she spent 25 years at the New York State Department of Health (DOH) where she worked in multiple bureaus of the department including the Bureau of Sexually Transmitted Disease Prevention and Epidemiology, the Office of Primary Care and Health Systems Management, the Bureau of Chronic Disease Epidemiology and Surveillance, and the Bureau of Cancer Epidemiology.

The Department of Population Health Sciences was formed in spring 2016 as part of a strategic realignment for the College. "We created the department to help facilitate collaborations between the School of Pharmacy and Pharmaceutical Sciences and the School of Arts and Sciences," explains ACPHS Provost Tarun Patel, Ph.D. "In addition to the six core faculty members in the department, there are three faculty members with joint appointments, and we anticipate that number will grow. These inter-school and inter-disciplinary collaborations are going to help advance teaching and research at the College and ultimately enrich the academic experiences of students across all of our programs."

As the founding chair, Dr. McLaughlin will play a key role in building the department and helping establish its identity. She's more than up to the task.

"I strongly believe that cultures don't just happen, they are formed," she says. "It starts with how people treat each other, how they communicate, and how they lead. It's important to me that the faculty members here feel like they are part of a community, not simply members of a department."

"That's the reason for the 'Culture Eats Strategy for Lunch' sign. If you don't have the right culture in place, even the best strategies are destined to fail."

The Department of Population Health Sciences is home to the B.S. in Public Health (introduced in 2016) and the M.S. in Health Outcomes Research and Informatics, two programs with natural synergies that haven't been fully tapped.

"Prior to my arrival, the faculty did an excellent job of developing and launching these two academic programs, which are still relatively new," says Dr. McLaughlin. "I'm looking to build upon the foundation they have established by adding what I have learned through my experiences in the workplace. Together, we will ensure that our students graduate with the skills needed to excel in the field of public health."

Which leads us back to those post-it notes. These represent the vision for a revamped Public Health curriculum, one that expands the range of coursework while still enabling students to specialize in their areas of interest. One of the new courses will be a Seminar in Public Health, a course for juniors that Dr. McLaughlin will teach this fall.

"I have always enjoyed working with students. I taught epidemiology in SUNY Albany's School of Public Health for seven years, and I planned to do more teaching after I retired," she says. "Now I have an opportunity to do it sooner!"

In addition to revisiting the curricula of the Public Health and Health Outcomes programs, Dr. McLaughlin is working with faculty to codify a research agenda for the department. "Our research vision for the department must be one that aligns with President Dewey's vision for the College," she says. "Making these linkages between our work and the strategic goals of the institution has been a fun exercise for us and something that I really enjoy."

With so much to do for the naturally energetic McLaughlin, it can be difficult to know where to start. Enter the tortoise and the hare. They serve as reminders of the book *Thinking Fast and Slow* by Nobel Prize winner Daniel Kahneman. The book explores the forces that govern our thoughts and actions, helping determine when a quick decision is needed and when more deliberate thought is advised.

Looking ahead, Dr. McLaughlin has no shortage of ideas for the department including plans to develop a five-year dual degree program in Public Health and Health Outcomes and exploring opportunities to offer continuing education programming for public health professionals. But that's a whole other set of post-it notes.

AN OUNCE OF

A 2015 ARTICLE FROM THE JOURNAL *PATIENT PREFERENCE AND ADHERENCE* states that an estimated half of chronic disease medications are not taken as prescribed. Worse yet, studies have linked non-adherence among sufferers of chronic diseases to poorer treatment outcomes and the progression of disease symptoms and complications.

When the disease is type 1 diabetes mellitus (T1DM) and the patient is an adolescent, the consequences of non-adherence can be life altering. Complications from poorly controlled, long-standing T1DM include heart disease, eye damage, pregnancy complications, and kidney disease. Persistent non-adherence beginning in early adulthood can lead over time to the early onset of these conditions.

Associate Professor of Population Health Sciences Wendy Parker, Ph.D., and Associate Professor of Pharmacy Practice Katie Cardone, Pharm.D., BCACP, want to prevent such scenarios from taking place. The two faculty members, along with ACPHS students from the Public Health and Pharm.D. programs, are collaborating on a project that seeks to identify the risk factors that may inhibit successful medication self-management among adolescents suffering from T1DM.

Since T1DM (sometimes referred to as Juvenile Diabetes) is usually diagnosed in childhood, parents or other caregivers naturally play a significant role in managing the child's medications. Responsibilities may include obtaining diabetic supplies, administering medications, managing nutrition, obtaining medication-related information, recognizing medication problems, and negotiating insurance plans.

Parents begin to play a lesser role in medication-related care as T1DM children move into adulthood, and it is during this transition where the threat of non-adherence increases. Many young adults struggle in particular when they leave home for the first time (e.g., to go away to College) and have to shoulder more of the responsibilities for their own health.

But which adolescents are most at risk and what types of interventions can help avoid adverse health events? Exploring these questions will be the focus of the project, which is being supported by a grant from The John Faunce and Alicia Tracy Roach Fund and administered by the Community Foundation of the Capital Region.

For the initial phase of the project, Drs. Parker and Cardone will be partnering with the local chapter of the Juvenile Diabetes Research Foundation (JDRF) to do one-on-one interviews with adolescent T1DM patients and parents. Following the interviews, the research team will then compare the findings with data available in the T1D Exchange Registry, a repository containing clinical, laboratory, and patient-reported data from over 28,000 patients across 75 U.S.-based health clinics.

Using mathematical modeling, Drs. Parker and Cardone will seek to isolate potential risk factors for non-adherence across different patient profiles. As Dr. Parker notes, identifying the risk factors is only part of the solution. "Then the challenge becomes, how do you craft the messages to help bring attention to these risks? How does this population want to receive those messages? How do you get them to trust you? It is a lot to consider which is why getting perspectives from multiple disciplines is often needed to determine the best way to attack the problem."

Adds Dr. Cardone, "The ultimate goal of the project is to encourage proper self-management of medications for these adolescents and prevent long term, negative health consequences that may result from non-adherence."

PREVENTION

COLLABORATIVE PROJECT SEEKS TO REDUCE THE RISKS OF NON-ADHERENCE IN YOUNG ADULTS WITH TYPE 1 DIABETES.

PUBLIC HEALTH FOR THE PUB

LIC GOOD

THE BACHELOR'S PROGRAM IN PUBLIC HEALTH is the latest undergraduate degree offering from the College, having received approval from the New York State Office of Higher Education in spring 2016.

The Public Health program evolved from the College's B.S. program in Health and Human Sciences (HHS) which launched in 2009. The Public Health program expands from the core HHS program to integrate a wider variety of coursework in areas that include social science, applied science, epidemiology, statistics, and research.

The B.S. in Public Health curriculum – which is based on the accreditation standards published by the Council on Education for Public Health – requires students to select one of two tracks: Community Health or Health Analytics. Each track culminates with a capstone project (typically an internship or research project) in which students focus on an aspect of public health that aligns with their career interests.

"As a college centered around human health, the addition of a Bachelor's program in Public Health is a natural extension of our academic offerings," says Associate Professor Wendy Parker, Ph.D., who serves as the Director of the Public Health program. "By leveraging our collective strengths as an institution, we have created a true interdisciplinary program that educates students to become scientifically grounded and socially engaged."

The Bureau of Labor Statistics also sees great opportunities in the field of Public Health. Their employment forecast for Public Health and related areas states, "Growth will be driven by efforts to improve health outcomes and to reduce health care costs by teaching people about healthy habits and behaviors and utilization of available health care services."

THE WAR TO END ALL WARS

WHEN PRESIDENT RICHARD NIXON signed the National Cancer Act on December 23, 1971, it kicked off what became popularly known as the "War on Cancer."

It's been nearly 50 years since the bill became law, and while progress has undoubtedly been made in the search for better treatments and outcomes, it quite likely has fallen short of the expectations of those who enacted the legislation.

Cancer remains the leading cause of death worldwide and is second only to heart disease in the U.S. According to the National Cancer Institute, approximately 39.6% of men and women will be diagnosed with cancer at some point during their lifetimes. That's 2 out of every 5 people walking the planet.

But there are also encouraging signs. From 2004-2013, the overall cancer death rate in the United States fell by 13% as the number of cancer survivors increased. The number of people in the United States living beyond a cancer diagnosis reached nearly 14.5 million in 2014 and is expected to rise to almost 19 million by 2024.

Yet, each piece of good news seems to be followed by one that casts doubt on our progress against this relentless disease. So where are we making the most gains? Where are we falling behind? Is a cure possible someday, and for that matter, what does a cure even look like?

For insights to these and other questions, we gathered a roundtable of ACPHS faculty from the basic sciences, clinical sciences, and population health sciences to share their perspectives on the state of cancer care today and what the future may have in store.

JENNA LEBLANC
DIRECTOR, M.S. PROGRAM IN CYTOTECHNOLOGY AND MOLECULAR CYTOLOGY

SHAKER MOUSA
CHAIRMAN AND EXECUTIVE VP, PHARMACEUTICAL RESEARCH INSTITUTE

ALLISON M. BURTON-CHASE
ASSISTANT PROFESSOR, DEPT. OF POPULATION HEALTH SCIENCES

TARUN B. PATEL
PROVOST

STEFAN BALAZ
CHAIR, DEPT. OF PHARMACEUTICAL SCIENCES, VERMONT CAMPUS

SARAH SCARPACE PETERS
ASSOCIATE PROFESSOR, DEPT. OF PHARMACY PRACTICE

THE CANCER DEATH RATE – ADJUSTED FOR AGE AND SIZE OF THE POPULATION – FELL JUST FIVE PERCENT BETWEEN 1950 AND 2009. DURING THIS SAME PERIOD, THE DEATH RATE FROM HEART DISEASE FELL BY NEARLY TWO-THIRDS. WHAT IS IT ABOUT CANCER THAT MAKES IT SO DIFFICULT TO TREAT?

PATEL: Here's the problem. We have 25,000 genes in our bodies – many of which are involved in cancer. You can identify and block certain cancer targets to effectively create a traffic jam, but the cancer cells are highly adaptive, and they know how to maneuver through the traffic. Cancer is like an aggressive driver who finds a back alley to get around the problem. When it heads down one of these alleys is when it's very hard to treat.

MOUSA: This is an opportunistic disease. Tumors operate independently in the body. If there are enough cancer cells, they are able to evade the immune system and build their own blood supply network. This is what allows the cancer to grow and spread, and that is when it becomes difficult to control.

PETERS: I feel that statistic is a bit misleading. Survival rates for some types of cancer have improved significantly through the years. Chronic Myeloid Leukemia (CML) is a great example. As a result of new oral targeted therapies that were approved in the early 2000's, CML patients are now living nearly as long as non-CML patients.

BURTON-CHASE: I would add that part of the problem is the language that we use. We talk about cancer as if it is a single entity, but cancer is an umbrella term for more than 100 different diseases. The more we learn, the more we realize how complicated it is.

THERE ARE THREE BASIC WAYS TO COMBAT CANCER: PREVENTION, DETECTION, AND TREATMENT. WHICH OF THESE AREAS HOLDS THE MOST PROMISE IN THE COMING DECADE FOR NOTABLY IMPACTING SURVIVAL RATES?

PATEL: I would say detection. If you can identify the type of cancer early, you can target the therapy better. This begins to move towards precision medicine.

BURTON-CHASE: I think the best opportunities are on the prevention side. We know that 25-30% of cancer deaths are related to smoking. Another 20-25% are diet related. Some people in the field believe that as many of 90% of cancer deaths can be prevented with behavioral changes. We have put a lot of money into treatment, and we have not gotten the same returns as we have with effective prevention strategies.

PETERS: I agree. The number of preventable cancer cases is much greater than the number of positive outcomes from any drug therapy currently on the market.

LEBLANC: Cancer is such a multi-factorial disease that I don't think you can separate these areas. They need to work together. More education is certainly needed as far as prevention is concerned. I'm also a big advocate for screening, and improving the ways we do it, so that we can diagnose the cancer while there's still time to treat it.

PROVOST PATEL MENTIONED "PRECISION MEDICINE" WHICH IS A TERM WE HEAR A LOT ABOUT THESE DAYS. WHAT IS ITS POTENTIAL AND HOW WIDELY IS IT BEING USED TODAY IN THE TREATMENT OF CANCER PATIENTS?

MOUSA: Cytotoxic chemicals used to treat most cancers are effectively poison, so you have to be very careful about how they are distributed throughout the body. I strongly believe that to effectively eliminate the tumor you have to surprise it. That means hitting it with a "big load" of chemotherapeutic drugs, perhaps 100x the concentration that we would normally use. The only way to do this without harming the patient's normal organs is through precision medicine where you can harness the power of nanotechnology, for example, to target the tumor and minimize the spillover to the healthy cells and organs of the body.

PETERS: Some of the newer drugs are small molecules with very specific targets. They still affect normal tissue but not to the degree that you would expect to see when you think about the traditional cytotoxic chemo experience. Knowledge of pharmacogenomics is also being adopted in the treatment of cancer, which is helping us better target which drugs will be most effective in which patients. This is

not some futuristic concept – it is something that we are using today in the clinic.

BALAZ: This is true. Pharmacogenomics is able to tell us about factors such as the presence or absence of certain targets, transporters, or metabolizing enzymes, which can help us estimate whether a certain treatment is likely to be successful. However, there is a lot of space left between the basic pharmacogenomic information and what is taking place in the body. What is happening in the cell that changes its behavior to the type of uncontrolled growth we see in cancer? What are the differences between the drug-affected components of the cancer cell and a normal cell? This needs to be analyzed. Precision medicine takes into account knowledge about the kinetics of many different processes, but to harness its potential, we need to know more about the basic mechanisms at work.

THE 21ST CENTURY CURES ACT ALLOCATES NEARLY $2 BILLION FOR CANCER RESEARCH (THIS INITIATIVE IS REFERRED TO AS THE "CANCER MOONSHOT"). IF YOU WERE IN CHARGE OF THAT MONEY, WHAT TYPES OF INITIATIVES WOULD YOU INVEST IT IN?

LEBLANC: I'd like to see more money directed to the expansion of screening programs. If we can identify biomarkers for more types of cancers, it will help us develop better targeted and tailored treatment therapies. I'd also like to see research that explores the impact of screening at younger ages. Too often we look only when there's a problem. That's not a screening program; that's a diagnostic program.

BALAZ: There is still a great need for more basic science research into the mechanisms of cancer. The pharmaceutical industry rarely does this type of research, which means government support is critical to driving it, particularly in the early stages.

BURTON-CHASE: I would invest more money in cancer education. We have a poor education system when it comes to cancer, and it is not just with the general public, but the providers as well. We have, for the first time ever, a preventive cancer vaccine (HPV). It is the only cancer vaccine that has ever been developed, yet we do not see the uptake rates that you see in other developed countries. All clinicians do not promote it in the same way. Some make it seem like a choice. We have not had a lot of major advances in cancer care, and when there is a breakthrough, we tend to do a poor job of educating people about it.

LEBLANC: Most people hear HPV and think "women" and "cervical cancer." However, HPV is also found in certain head and neck cancers. And it's not just in females. It's in males too. But that message does not always come through which underscores the fact that we are falling short on education.

IN OUR ONGOING BATTLE WITH CANCER, WHAT IS YOUR GREATEST CAUSE FOR HOPE?

PETERS: Seeing new classes of drugs coming to fruition and how our knowledge of the basic pathology of cancer is expanding are both reasons for optimism. That is translating to greatly improved survival in cases where we didn't see it before. For example, when I was in residency, patients with Stage 4 lung cancer used to live six months, and now these patients can live as long as 2-5 years.

BURTON-CHASE: I would say it is patients being advocates for themselves – being more proactive with their providers, sharing more information within families. They are on a much more level playing field than in the past, and better-educated patients typically get better treatment and have better outcomes.

LEBLANC: We have made tremendous improvements in diagnostics and finding certain cancers earlier. There used to be sites in the body that were very difficult to access like the pancreas. Now endoscopic ultrasound can get to places that weren't easily accessible before. Endobronchial ultrasound allows us to not only reach lesions in the respiratory tract, but also the surrounding lymph nodes, which helps determine staging. These techniques have really entered the mainstream in the past 10-15 years. The ability to make earlier and more accurate diagnoses has improved outcomes for countless numbers of patients because, in most cases, the earlier you find the cancer, the more effective the treatment will be.

MOUSA: The technological advances are remarkable. It is now about implementation and adoption. We need to find ways to accelerate the marriage between technology and practice.

WHAT GIVES YOU THE MOST CONCERN?

PETERS: I'm very concerned about prevention getting overlooked, particularly when I read reports that millennials have higher rates of colorectal cancer than Generation Xers and Baby Boomers. I'm also concerned by what seems to be increasing numbers of younger people getting diseases they shouldn't have. There needs to continue to be epidemiological research to monitor these trends and help inform prevention efforts.

PATEL: For me, it's the shrinking levels of government research funding in the sciences. Right now, the National Cancer Institute (NCI) funds scored grants at around the six percentile. But it's not only that. Not every approach for treating cancer comes from NCI-funded research. Continued cuts to NIH funding will mean research on other diseases will also suffer. Sometimes it's a breakthrough in one area of study that fuels an advance in a different field. It's very interconnected.

MOUSA: I could not agree more. If we continue to reduce funding for scientific research, labs are going to shut down. There will be fewer new scientists. In fact, it's happening now. When I talk to post docs today, they want to go into industry for administrative and management opportunities, not research-based faculty positions. The training and retraining that takes place in academia fosters collaborations. That would all get cut out. This would have decades and decades of deleterious effects on scientific progress and innovation.

HOW DO YOU DEFINE A CURE IN THE CONTEXT OF CANCER, AND WHAT IS THE POSSIBLE TIMELINE FOR SUCH A CURE?

BURTON-CHASE: Instead of talking about a cure, we should really be talking about remission – for how long and for whom. Optimism is important, and you certainly do not want to take that away, but you have to balance patient expectations with reality. For example, when we talk about survival rates, we mean a certain type of cancer has, say, a 40% survival rate over the next five years. We do not systematically collect and discuss data for 10, 15, 20 years out. That is not always made clear to patients, which is why we need to do a better job of having these conversations. When patients and families get information after the fact, that is when they start to feel like the health care system does not work for them.

PETERS: In the medical community, we define cure as good long term survival, but that's not what patients want to hear or accept. People want to feel they can have control over their cancer, but it also contributes to this false sense of outcome. Patients will always ask me, "How long do I have to be on this therapy?" and I explain, "Until you have side effects you cannot tolerate or until it doesn't work anymore." It's hard to have those conversations because sometimes patients think they will be able to take a pill for a month, and they will be cured. Based on what we know today, metastatic disease cannot be cured. You can't get rid of it. But if you can manage it and keep it from spreading to vital organs, it could take on the shape of a chronic disease similar to how we now treat HIV.

MOUSA: I agree with Sarah. If we can localize the cancer and control its behavior, we can treat it like a chronic disease. I think within a decade or two we can get there with many forms of cancer therpeutics. However, that assumes we have adequate government funding for research and are able to resolve some of the related bioethical issues.

LEBLANC: For me, a cure is about moving past a one-size-fits-all approach to care and getting the patient the type of individualized treatment they need.

BALAZ: Any discussion of a cure must consider the type of cancer and how quickly it becomes mortal. A cure leads to a measurable extension of life. It's hard to imagine for some types of cancer that we will cure them completely. Depending on the type of cancer, therapies may extend survival by 20 years or far less, but they are all beneficial.

PATEL: Five years of remission is a success, success, success. In remission, patients are checked regularly, and our monitoring continues to improve which means any future treatments are going to begin sooner and hopefully be more effective.

PETERS: If I could just add one more thing ... It's important to keep in mind that we all have the potential to develop cancer. We all have mutations in our DNA that our bodies are trying to fix and repair right now. Mutations accumulate in our genes, but we typically can handle them. Unfortunately some people are not able to manage it for reasons that may have to do with their immune systems, genetics, environmental exposure, or something else altogether. What that trigger is and why and when it occurs – that is the million dollar question.

THE PANELISTS

STEFAN BALAZ, PH.D. is the Chair of the Department of Pharmaceutical Sciences in the ACPHS-Vermont Campus. The goal of his research is to better understand the processes affecting the fates and effects of drugs in the body in terms of drug structures and properties.

ALLISON M. BURTON-CHASE, PH.D., is an Assistant Professor in the Department of Population Health Sciences. Her primary area of research is in the behavioral aspects of cancer prevention and survivorship in families with hereditary cancer syndromes.

JENNA LEBLANC, M.S., CT (ASCP), is the Director of the Master's in Cytotechnology and Molecular Cytology program. She also serves as the President of the American Society for Cytotechnology.

SHAKER MOUSA, PH.D., MBA, is the Chairman and Executive Vice President of the Pharmaceutical Research Institute and Vice Provost of Research. His research explores ways that nanotechnology and biotechnology can be used to improve the detection, prevention, and treatment of cancer.

TARUN B. PATEL, PH.D., is the Provost at ACPHS. He has received more than 30 externally funded grants, including 16 from the National Institutes of Health. The focus of his research is hepatocellular carcinoma, the most common form of liver cancer.

SARAH SCARPACE PETERS, PHARM.D., MPH, BCOP, is an Associate Professor in the Department of Pharmacy Practice and a board certified oncology pharmacist with a practice site at the St. Peter's Health Partners Cancer Care Center. She is the immediate Past President of the Hematology/Oncology Pharmacy Association.

SCHOLARLY ACTIVITY REPORT

JANUARY 1, 2016 – DECEMBER 31, 2016

SCHOOL OF PHARMACY AND PHARMACEUTICAL SCIENCES

DEPARTMENT OF PHARMACY PRACTICE

PUBLICATIONS

Monique Bidell

Bidell MR, McLaughlin M, Faragon J, Morse C, Patel N. Desirable Characteristics of Hepatitis C Treatment Regimens: A Review of What We Have and What We Need. *Infectious Diseases and Therapy 2016* Jul 6 (ePub ahead of print).

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Kimberly Skylstad

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Matthew Stryker
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PRESENTATIONS

POSTER/PLATFORM PRESENTATIONS

Monique Bidell
Fimansyah A, Nguyen H, Bidell M, Han Z, Pettit NN. Outcomes associated with time-to-antibiotic administration among patients with febrile neutropenia in the emergency department. ASHP Midyear Exhibition, Las Vegas, NV, December 2016.

Brown SJ, Lane SM, Bidell MR. Assessment of institutional fluoroquinolone use for uncomplicated infections. ASHP Midyear Exhibition, Las Vegas, NV, December 2016.

Falli E, Poucher A, Lombardi CL, Ferri D, Bidell MR. Evaluation of an adjusted body weight-based vancomycin dosing guideline. ASHP Midyear Exhibition, Las Vegas, NV, December 2016.

Bidell MR, Lodise TP. Levofloxacin-associated tendinopathy: What is the risk? ACPHS Research Forum, Albany, NY, January 2016; Making A Difference in Infectious Diseases (MAD-ID), Orlando, FL, May 2016.

Laurie Briceland
Rosa S, Briceland L. Introducing students to Pharmacy Ownership through the development of an Entrepreneurial APPE Rotation. 2016 AACP Annual Meeting (abstract).

Briceland L, Rosa S, Lubowski T, Jablanski C. Creation of Experiential Education Honors Policies to Recognize Exemplary IPPE and APPE Performance. AACP Annual Meeting, Anaheim, CA, July 25, 2016 (abstract).

Katie Cardone
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Jessica Farrell
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Quidort A, Wales D, Garrison GD, Lindstrom J, Verrico I. Improving Immunization Rates of Children Age 19 to 35 months: An Interprofessional Approach at a Multidisciplinary Training Site. American Academy of Pediatrics (AAP) National Conference & Exhibition, San Francisco, CA, October 22-25, 2016.

Michael Kane

Stryker M, Kane M, Busch R, Hamilton R. An Evaluation of Proprotein Convertase Subtilisin/Kexin Type 9 (PCSK9) Inhibitors in Patients with Diabetes Mellitus (abstract 187). National Lipid Association's Scientific Sessions, New Orleans, LA, May 18, 2016.

Stryker M, Kane M, Busch R, Hamilton R. A Pharmacist-Run Proprotein Convertase Subtilisin/Kexin Type 9 (PCSK9) Inhibitor Clinic: Short-Term Results and Practical Strategies (poster 97). American College of Clinical Pharmacy's Virtual Poster Symposium, May 18, 2016.

Bizier J, Kane MP, Busch RS, Bakst G, ElDeiry SE, Hamilton RA. Efficacy and Safety of Switching Sodium-Glucose Cotransporter-2 (SGLT-2) Inhibitor Therapy in Type 2 Diabetes Mellitus. ASHP Midyear Clinical Meeting, Las Vegas, NV, December 7, 2016.

Nicole Lodise

Bartelme KM, Lodise NM, Rafie S, Shealy K, Stone R, Vernon V. The Women's Health PRN Members and Accomplishments. American College of Clinical Pharmacy (ACCP) Annual Meeting, Hollywood, FL, October 2016.

Thomas Lodise

Lodise TP, Ye M, Keyloun KR, Zhao Q, Gillard P. Identification of Patients at Greatest Risk for Carbapenem Resistance in Patients With Serious Hospital-Onset Infections Due to Enterobacteriaceae Species (abstract 1794). Oral Presentation at IDWeek2016, New Orleans, LA, October 26-30, 2016. Presenter: Lodise.

Berger A, Bhagnani T, Wang R, Zhao Q, Ye M, Lodise TP. Does Timing of Receipt of Appropriate Antimicrobial Therapy Make a Difference Among Patients with Serious Infections due to Resistant Gram-negative Pathogens? (abstract 1796). Oral Presentation at IDWeek2016, New Orleans, LA, October 26-30, 2016. Presenter: Lodise.

Luther M, Caffrey A, Dosa D, Lodise TP, LaPlante K. Vancomycin plus Piperacillin/Tazobactam and Acute Kidney Injury in Adults: A Systematic Review and Meta-analysis (abstract 1805). Poster Presentation at IDWeek2016, New Orleans, LA, October 26-30, 2016. Presenter: Luther.

Lodise TP. Wang R, Bhagnani T, Zhao Q, Ye M, Berger A. Clinical and Economic Burden of Multi-drug Resistant Pseudomonas sp. (MDRP) Among Patients with Serious Infections in US Hospitals (abstract 2045). Poster Presentation at IDWeek2016, New Orleans, LA, October 26-30, 2016. Presenter: Lodise.

Mckinnell JA, Corman S, Patel D, Lodise TP. Telavancin vs. Vancomycin in the Treatment of Hospital-Acquired Pneumonia Caused by S. Aureus: Decision Analytic Model (abstract 1250). Poster Presentation at IDWeek2016, New Orleans, LA, October 26-30, 2016. Presenter: Mckinnell JA.

Martin A, Fahrbach K, Zhao Q, Lodise T. Association between Carbapenem Resistance and Mortality among Adults Hospitalized with Serious Infections due to an Enterobacteriaceae spp: Results of a Systematic Literature Review and Meta-Analysis (abstract 355). Poster Presentation at IDWeek2016, New Orleans, LA, October 26-30, 2016. Presenter: Martin.

Natesan S, Pai MP, Lodise TP. Determination of Alternative Ceftolozane/Tazobactam (C/T) Dosing Regimens for Patients with Infections Due to Pseudomonas aeruginosa with high (C/T) MIC values (abstract 1959). Poster Presentation at IDWeek2016, New Orleans, LA, October 26-30, 2016. Presenter: Natesan.

Huang D, Lodise T. Use of PK/PD Systems Analyses to Determine the Optimal Fixed Dosing Regimen of Iclaprim (ICL) for Phase III ABSSSI Clinical Trial. Abstract 1971. Poster Presentation at IDWeek2016™: A Joint Meeting of IDSA, SHEA, HIVMA, and PIDS. New Orleans, LA, October 26-30, 2016. Presenter: Huang.

Carreno JJ, Lomaestro BM, Tietjan J, Lodise T. Validation Of A Bayesian Approach To Estimate Vancomycin Exposure In Obese Patients With Limited PK Sampling (abstract 496). Poster Presentation at ASM Microbe 2016, Boston, MA, June 16-20, 2016. Presenter: Carreno.

O'Donnell J, Rhodes NJ, Lodise T, Prozialeck W, Miglis CH, Natarajan V, Joshi M, Pais G, Lamar P, Cluff C, Gulati A, Scheetz MH. 24-Hour Pharmacokinetic Relationships for Vancomycin (Van) and Novel Urinary Biomarkers of Acute Kidney Injury (abstract 517). Poster Presentation at ASM Microbe 2016, Boston, MA, June 16-20, 2016. Presenter: O'Donnell.

Schriever C, Ahmed A, Delehanty KR, Yager J, Farrow G, Kashtan R, Lodise T, Patel N. Comparison of frequencies of drug-drug interactions between sofosbuvir/ledipasvir and ombitasvir/dasabuvir/paritaprevir/ritonavir +/- ribavirin among HIV/HCV coinfected patients (abstract SAT-223). Poster presentation at the European Association for the Study of the Liver – International Liver Congress, Barcelona, ES, April 2016. Presenter: Patel.

Yager J, Lodise T, Patel N. Minimum adherence threshold necessary to achieve virologic suppression (abstract 1995). Poster presentation at the 26th European Congress on Clinical Microbiology and Infectious Diseases, Amsterdam, NL, April 2016. Presenter: Patel.

Patel N, Yager J, McGuey L, Hoye-Simek A, Lodise T. Relationship between single-tablet regimen and adherence to HIV and non-HIV medications (abstract 1998). Poster presentation at the 26th European Congress on Clinical Microbiology and Infectious Diseases, Amsterdam, NL, April 2016. Presenter: Patel.

Patel N, Hecox Z, Morse C, Sullivan S, Hoye-Simek A, Yager J, Lodise T. Maintenance of non-HIV cardiometabolic comorbidity control among HIV-infected veterans' affairs patients: a comparison between single tablet and multiple tablet antiretroviral regimens (abstract 1991). Poster presentation at the 26th European Congress on Clinical Microbiology and Infectious Diseases, Amsterdam, NL, April 2016. Presenter: Patel.

Yager J, Lodise T, Patel N. Minimum adherence threshold needed for maintenance of virologic suppression (abstract 1993). Platform presentation at the 26th European Congress on Clinical Microbiology and Infectious Diseases, Amsterdam, NL, April 2016.
Presenter: Yager.

O'Donnell JN, Rhodes NJ, Lodise TP, Prozialeck WC, Miglis CM, Venkatesan N, Joshi M, Pais G, Lamar PC, Cluff C, Gulati A, Scheetz MH. 24-hour pharmacokinetic relationships for vancomycin and novel urinary biomarkers of AKI. 1st American Society of Microbiology Microbe, Boston, MA, June 2016.

Lee Anna Obos

Obos L. Two Phase Pharmacy Skills Laboratory Video Project: Student Reactions and Effect on Lab Performance, AACP Annual Meeting, Anaheim, CA, July 2016.

Nimish Patel

Yager J, Lodise T, Patel N. Minimum adherence threshold needed for maintenance of virologic suppression (abstract 1993). Platform presentation at the 26th European Congress on Clinical Microbiology and Infectious Diseases, Amsterdam, NL, April 2016.
Presenter: Yager.

Patel N, Hecox Z, Morse C, Sullivan S, Hoye-Simek A, Yager J, Lodise T. Maintenance of non-HIV cardiometabolic comorbidity control among HIV-infected veterans' affairs patients: a comparison between single tablet and multiple tablet antiretroviral regimens (abstract 1991). Poster presentation at the 26th European Congress on Clinical Microbiology and Infectious Diseases, Amsterdam, NL, April 2016.
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Patel N, Yager J, McGuey L, Hoye-Simek A, Lodise T. Relationship between single-tablet regimen and adherence to HIV and non-HIV medications (abstract 1998). Poster presentation at the 26th European Congress on Clinical Microbiology and Infectious Diseases, Amsterdam, NL, April 2016.
Presenter: Patel.

Yager J, Lodise T, Patel N. Minimum adherence threshold necessary to achieve virologic suppression (abstract 1995). Poster presentation at the 26th European Congress on Clinical Microbiology and Infectious Diseases, Amsterdam, NL, April 2016.
Presenter: Patel.

Schriever C, Ahmed A, Delehanty KR, Yager J, Farrow G, Kashtan R, Lodise T, Patel N. Comparison of frequencies of drug-drug interactions between sofosbuvir/ledipasvir and ombitasvir/dasabuvir/paritaprevir/ritonavir +/- ribavirin among HIV/HCV coinfected patients (abstract SAT-223). Poster presentation at the European Association for the Study of the Liver – International Liver Congress, Barcelona, ES, April 2016.
Presenter: Patel.

Britt NS, Potter EM, Patel N, Steed ME. Derivation And Validation Of A Mortality Risk Assessment Model For Vancomycin-Resistant Enterococcal (Vre) Bacteremia Based On Source Of Infection (session 333). Platform presentation at American Society for Microbiology Microbe Meeting, Boston, MA, June 2016.
Presenter: Britt.

Britt NS, Potter EM, Patel N, Steed ME. Clinical Outcomes In Vancomycin-Resistant Enterococcus (VRE)/Methicillin-Resistant Staphylococcus aureus (MRSA) Bloodstream Coinfection Treated With Daptomycin Or Linezolid (abstract 396). Poster presentation at American Society for Microbiology Microbe Meeting, Boston, MA, June 2016.
Presenter: Britt.

Ahmed AA, Schriever C, Amin R, Delehanty KR, Yager J, Patel N. Comparing the Population-Based Frequency of Contraindicated Drug-Drug Interactions between Daclatasvir/Sofosbuvir (DAC/SOF), Grazoprevir/Elbasvir (GZR/EBV), Ledipasvir/Sofosbuvir (LDV/SOF), Ombitasvir/Paritaprevir/Ritonavir + Dasabuvir ± Ribavirin (OMB/PTV/RTV + DSV ± RBV) and Simeprevir/Sofosbuvir (SIM/SOF) for Treatment of Hepatitis C Monoinfection (abstract 60260). Poster presentation at IDWeek 2016. New Orleans, LA, October 2016.
Presenter: Patel.

Yager J, Faragon J, Patel N. Quantifying the minimum adherence threshold associated with the development of reverse transcriptase mutations among HIV-infected Veterans' Affairs patients receiving antiretroviral therapy (abstract 225954). Poster Presentation at the 2016 ASHP Midyear Clinical Meeting, Las Vegas, NV, December 2016.
Presenter: Yager.

Sangiovanni RJ, Yager J, Donadio A, Farrow G, Patel N. Use of vancomycin in VISN-2 patients who have previously experienced vancomycin-associated acute kidney injury (AKI): Predictors and outcomes of secondary vancomycin-associated AKI (abstract 225960). Poster presentation at the 51st ASHP Midyear Clinical Meeting and Exhibition, Las Vegas, NV, December 2016.
Presenter: Sangiovanni.

Sandra Rosa

Rosa S, Briceland L. Introducing students to Pharmacy Ownership through the development of an Entrepreneurial APPE Rotation. 2016 AACP Annual Meeting (abstract).

Briceland L, Rosa S, Lubowski T, Jablanski C. Creation of Experiential Education Honors Policies to Recognize Exemplary IPPE and APPE Performance. AACP Annual Meeting, Anaheim, CA, July 25, 2016 (abstract).

Matthew Stryker

Stryker M, Kane M, Busch R, Hamilton R. An Evaluation of Proprotein Convertase Subtilisin/Kexin Type 9 (PCSK9) Inhibitors in Patients with Diabetes Mellitus. 2016 National Lipid Association's Scientific Sessions, Abstract Identification: 187.

Stryker M, Kane M, Busch R, Hamilton R. A Pharmacist-Run Proprotein Convertase Subtilisin/Kexin Type 9 (PCSK9) Inhibitor Clinic: Short-Term Results and Practical Strategies. American College of Clinical Pharmacy's 2016 Virtual Poster Symposium, Poster Number: 97.

INVITED PRESENTATIONS

Kelly Bach

Bach K. Delivering a powerful residency interview presentation. ACPHS/NYSCHP Residency Preparation Symposium, ACPHS, Albany, NY, October 2016.

Monique Bidell

Bidell M. A case of vomiting, malaise and acute injury (co-presented with Yolana Fuks and David Colman). Medical Grand Rounds, St. Peter's Hospital, Albany, NY, December 2016.

Bidell M. Fluoroquinolone safety: Tipping the risk-benefit scale.

PharmaMed 2016, Dubai, United Arab Emirates, December 2016.

Bidell M. Why complete a pharmacy residency and how to prepare to be a competitive candidate (co-presented with Kate Cabral). ACPHS/NYSCHP Residency Preparation Symposium, ACPHS, Albany, NY, October 2016.

Bidell M. Updates in antimicrobial safety: Focus on fluoroquinolones. *Continuing Education*. Infectious Diseases Symposium, ACPHS, Albany, NY, February 2016.

Abby Boire

Boire A. Updates in Heart Failure Therapy: What the Pharmacist Needs to Know. April 2016.

Jeffrey Brewer

Brewer JM. Professional Organizations Council: AACP Interim Meeting Report, Effective Leadership, Spring 2016.

Laurie Briceland

Briceland L. Overview of Antimicrobial Therapy. Sage College Nurse Practitioner Program, February 2016.

Michael Brodeur

Brodeur MR. FOAM – Free Open Access Medical education – Medical education for anyone, anywhere, anytime. American Society of Consultant Pharmacist Annual Meeting, Dallas, TX, November 4, 2016.

Brodeur MR. Colonie Emergency Medical Services. *Continuing Education*. November 2016.

Brodeur MR. Falls and Their Prevention: A Geriatrics and Pharmacological Imperative Fall Risk Identification and Intervention for the Community-Dwelling Older Adult. Public Health Live, SUNY School of Public Health, October 20, 2016.

Brodeur MR. Pill Pruning - The Art and Science of Deprescribing. Office of Postgraduate Education, ACPHS, June 8, 2016.

Brodeur MR. Pain Management in an Era of Uncertainty. Pharmacist Society of the State of New York (PSSNY), Mid-Winter Meeting, Saratoga, NY, January 30, 2016.

Katherine Cabral

Why Complete a Pharmacy Residency? NYSCHP/ACPHS Residency Prep Symposium, Albany College of Pharmacy and Health Sciences, Albany NY, October 2016.

Through Thick & Thin: An Update on Anticoagulants. *Continuing Education*. ACPHS Cardiovascular Symposium, Albany College of Pharmacy and Health Sciences, Albany, NY, April 2016.

Katie Cardone

Cardone K. Updates In Type 2 Diabetes Management: Guideline Updates. *Continuing Education* (co-presented with See-Won Seo). Mohawk Valley Pharmacists Association, Utica, NY, December 2016.

Cardone K. Use of SGLT2 Inhibitors in Treating T2D. *Continuing Education*. Mohawk Valley Pharmacists Association, Utica, NY, December 2016.

Cardone K. Updates In Type 2 Diabetes Management: Case-Based Discussion Of Diabetes Management. *Continuing Education* (co-presented with See-Won Seo). Mohawk Valley Pharmacists Association, Utica, NY, December 2016.

Cardone K. Pharmacology, Pharmacokinetics and Pharmacodynamics in Diabetic Kidney Disease: Give It Your Best Shot: Newer Diabetes Agents in CKD. *Continuing Education*. American Society of Nephrology Kidney Week, Chicago, IL, November 2016.

Cardone K. Newer Agents and Their Implications for Patients with Chronic Kidney Disease: The Current and Potential Role of SGLT-2 Inhibitors in Patients with Chronic Kidney Disease. *Continuing Education*. Annual Meeting of the American College of Clinical Pharmacy, Hollywood, FL, October 25, 2016.

Cardone K. Delivering Medication Therapy Management in the Community. *Continuing Education and Certificate Training Program*. Mohawk Valley Pharmacists Association, Utica, NY, Spring 2016.

Cardone K. Update on Diabetic Kidney Disease (DKD) Management: SGLT-2 inhibitors. *Continuing Education*. National Kidney Foundation Spring Clinical Meeting, Boston MA, May 2016.

Cardone K. Anemia Workshop: Management of ESA Hyporesponse: A Fine Balance. *Continuing Education*. National Kidney Foundation Spring Clinical Meeting, Boston, MA, May 2016.

Cardone K. Pragmatic Drug Dosing across the Continuum in Kidney Disease: Drug Dosing In Hemodialysis – Time Over Matter? *Continuing Education and Active Learning Case Session*. National Kidney Foundation Spring Clinical Meeting, Boston, MA, May 2016 (session chair/moderator).

Cardone K. Pragmatic Drug Dosing across the Continuum In Kidney Disease: Drug Dosing In Peritoneal Dialysis. *Continuing Education and Active Learning Case Session*. National Kidney Foundation Spring Clinical Meeting, Boston, MA, May 2016 (session chair/moderator).

Cardone K. Nephrology Review for the Ambulatory Care Pharmacist Review and recertification course for board certified ambulatory care pharmacists (BCACP). American College of Clinical Pharmacy Spring Conference, Phoenix, AZ, April 2016.

Jo Carreno

Carreno J. Zika Virus: Beyond the Hype. *Continuing Education*. Capital Area Pharmacists Society, Albany, NY.

Carreno J. The Use of Rapid Diagnostics within Antimicrobial Stewardship Programs. *Continuing Education*. ACPHS, Albany, NY.

Jacqueline Cleary

Cleary J. Opioid Induced Respiratory Depression and In-Home Naloxone Use: Application of the Risk Index for Overdose or Serious Opioid Induced Respiratory Depression (RIOSORD) Tool. *Continuing Education*. Alden March Bioethics Institute Clinical Ethics Conference, ACPHS, Albany, NY, November 19, 2016.

Cleary J. Pharmacist's Role in Naloxone Education and Distribution. Rho Chi and PLS joint meeting, ACPHS, Albany, NY, November 2016.

Cleary J. Opioid Induced Respiratory Depression and Naloxone Distribution: Application of the RIOSORD Tool. *Continuing Education*. Annual Preceptor Training Day, ACPHS, Albany, NY, August 2016.

Giselle D'Epiro

D'Epiro G. Vitamin Supplementation in Women. University of Vermont Women's Health Conference, 2016.

D'Epiro G. The New Anticoagulants. UVM Family Medicine Review Course, 2016.

Jessica Farrell
Farrell JF. Proton Pump Inhibitors (PPI): How to Digest the News? Scleroderma Foundation National Patient Education Conference, New Orleans, LA, July 29, 2016.

Farrell JF. The Role of Biologics in Psoriatic Arthritis. *Continuing Education*. ACPHS, Albany, NY, September 2016.

Gina Garrison
Garrison G. 2016 Annual CDC Immunization Updates for Adult and Infants / Children / Adolescents. AMC Internal Medicine and Pediatrics Group, Latham, NY.

Garrison G. 2016 Updates in Pharmacotherapy for Adult Dyslipidemia. *Continuing Education.* Albany Medical College – Internal Medicine and Pediatric Update, Saratoga, NY.

Garrison G. 2016 Updates in Pharmacotherapy for Adult Dyslipidemia. *Continuing Education.* ACPHS Cardiovascular Update, Albany, NY.

Garrison G. Dyslipidemia: Would every woman should know. Capital Region Women's Business Council, Albany, NY.

Elizabeth Higdon
Higdon E. Calamine Compounding Workshop. Presented to high school students at TRIO event, Colchester, VT, February 2016.

Michael Kane
Kane M. Diabetes Update. American Society of Consulting Pharmacists Mid-State New York Chapter Meeting and Education Day, Syracuse, NY, June 16, 2016.

Kane M. Keynote Address. The Capital District Residency & Fellowship Graduation Luncheon, Albany, NY, June 8, 2016.

Kane M. Strategies for Diabetes Prevention. Mid-Hudson Regional Hospital Pre-diabetes Epidemic Conference: Public Health Impact & Prevention of Type 2 Diabetes, Poughkeepsie, NY, May 14, 2016.

Kane M. Endocrine Disorders. For Ambulatory Care Pharmacy Preparatory Review Course, ACCP 2016 Updates In Therapeutics, Phoenix, AZ, April 9, 2016.

Kane M. The New Classes of Diabetes Medications: A Synopsis. Grand Rounds at the Baystate Medical Center, Springfield, MA, March 22, 2016.

Kane M. Obesity Is a Chronic Disease: Let's Treat it That Way. APhA Annual Meeting, Baltimore, MD, March 7, 2016.

Teresa Kane
Kane T. Aseptic Technique Training Videos. ACPHS Instructional Design Symposium, Spring 2016.

David Kile
Kile D. Profiles in Leadership Hollywood Version Instructional Design Symposium. ACPHS, March 23, 2016.

Kile D. Medication Adherence: America's Other Drug Problem. ACPHS Pharmacy Practice Update, June 8, 2016.

Nicole Lodise
Lodise NM. JCPP Pharmacist's Patient Care Process: Standardizing the Approach to Patient Care. *Continuing Education.* Albany College of Pharmacy and Health Sciences Barbara M. DiLascia Women's and Men's Health Symposium, Albany, NY, September 2016.

Lodise NM. Curricular Adoption and Integration of the Pharmacists' Patient Care Process. American Association of Colleges of Pharmacy (AACP) Teachers' Seminar, Anaheim, CA, July 2016.

Thomas Lodise
Vancomycin PK/PD Efficacy (symposium). "Contemporary Considerations: Cutting Edge Advances in Vancomycin Therapy." 2016 ASHP Midyear Clinical Meeting Las Vegas, NV, December 7, 2016.

Exposure-Centric vs. Dose-Centric Drug Development Approach (workshop). "Opportunities and challenges in development of new antibacterial therapeutics." Superbugs & Superdrugs USA 2016, Iselin, NJ, November 16, 2016.

The Drug: Update on Treatment Options (satellite symposium). "The Bug-Drug-Host Triad in the Era of Antibiotic Resistance: Focus on the Spectrum of ABSSSI." IDWeek2016, New Orleans, LA, October 28, 2016.

Economics of Treating ABSSSI in Different Settings of Care (satellite symposium). IDWeek2016, New Orleans, LA, October 27, 2016.

PK/PD versus frequentist approaches for drug development – Pro (debate). ESCMID/ASM Conference on Drug Development to Meet the Challenge of Antimicrobial Resistance. Vienna, Austria, September 23, 2016.

Polymyxins, What Do We Really Know? Allergan Medical Affairs, Jersey City, NJ, June 30, 2016.

Lipoglycopeptides and Glycopeptides (symposium). "Antimicrobial Toxicodynamics (Organized in Cooperation with the International Society of Anti-Infective Pharmacology (ISAP)." ASM Microbes 2016, Boston, MA, June 20, 2016.

Economics of Treating ABSSI in Different Settings of Care (satellite symposium). Making a Difference (MAD) - ID Annual Meeting, Champions Gate, FL, May 6, 2016.

Quantifying Antibiotic Exposure-Effect Relationships in Patients with Infections: A Focus on Beta-Lactams and Vancomycin. Midwestern University, Downers Grove, IL, April 15, 2016.

Advanced Pharmacokinetics/Pharmacodynamics (continuing education). New York State Council of Health-system Antimicrobial Stewardship Program, Hosted by Greater New York Hospital Association, New York, NY, March 16, 2016.

Combination Therapy for Serious Gram-Negative Infections (continuing education). New York State Council of Health-system Antimicrobial Stewardship Program, Hosted by Greater New York Hospital Association, New York, NY, March 16, 2016.

Nimish Patel
Patel N. Medication Errors in HIV. *Continuing Education.* Onondaga Pharmacists Society, Syracuse, NY, June 2016.

Patel N. Medication Errors in HIV. *Continuing Education.* Capital Area Pharmacists Society, Albany, NY, September 2016.

Patel N. Updates in Epidemiology and Treatment of Sexually Transmitted Infections. *Continuing Education.* ACPHS, Albany, NY, September 2016.

Patel N. Medication Errors in HIV. *Continuing Education.* Pharmacists' Society of the State of New York Annual Meeting, Rye Brook, NY, June 2016.

Patel N. Medication Errors in HIV. *Continuing Education.* Telemedicine series broadcast to all New York State Department of Corrections pharmacists, Albany Medical Center HIV Clinic, Albany, NY, June 2016.

Patel N. Updates in Epidemiology and Treatment of Hepatitis C Infection. *Continuing Education.* ACPHS, Albany, NY, February 2016.

Patel N. Updates in Epidemiology and Treatment of HIV. *Continuing Education.* ACPHS, Albany, NY, February 2016.

Joanna Schwartz
Schwartz J. Oral chemotherapy safety and adherence. Northern New England Chapter of the American Society of Clinical Oncology (NNECOS), October 26, 2016, Bretton Woods, NH.

Schwartz J. Assessment of herbal, dietary supplement and OTC medications with chemotherapy. University of Vermont Breast Symposium, Burlington, VT, October 4, 2016.

Schwartz J. New Drug Update. Northern New England Chapter of the American Society of Clinical Oncology, October 28, 2016, Bretton Woods, NH.

See-Won Seo
Performance-Enhancing Drugs. *Continuing Education.* ACPHS, Albany, NY, Sept 2016.

New Drug Update. *Continuing Education.* Pharmacists Society of the State of New York Mid-Winter Conference, Saratoga Springs, NY, Jan 2016.

Matthew Stryker
Part II: Starting Non-Insulin Medication in the Primary Care Setting for Type 2 Diabetes. American Diabetes Association – Innovations in Diabetes Care Annual Meeting, Troy, NY, November 10, 2016.

Alexandra Watson
Watson A. Comprehensive Primary Care (CPC) Leading Innovation, Inspiring Engagement. New York Region Full Day Learning Session, October 2016 (panelist).

Watson A. CapitalCare Medical Group Diabetes Support Group: Ask a Pharmacist. September 2016.

Watson A. Updates on Diabetes: A Focus on Guidelines and Pharmacotherapy. *Continuing Education.* ACPHS, Albany, NY, June 2016.

Watson A. Life on Rotations, APhA-ASP student chapter meeting, ACPHS, Albany, NY, May 2016.

Watson A. CapitalCare Medical Group Diabetes Support Group: Diabetes Medications and Neuropathy. January 2016.

GRANTS

Katie Cardone
Principal Investigator: Wendy M. Parker
Co-Principal Investigator: Katie E. Cardone
Project: Health disparities and medication management strategies among adolescents and young adults with Diabetes Mellitus
Grantor: John Faunce and Alicia Tracy Roach Fund
Amount: $24,943.36

Thomas Lodise
Project: Antibacterial Resistance Leadership Group: Minocycline PK in IC Patients
Grantor: Duke University, National Institute of Allergy and Infectious Diseases (NIAID)
Amount: $35,802
Term: December 1, 2016 - November 30, 2017

Michael Kane, Matthew Stryker, Robert Hamilton
Project: A Real World, Observational Study of Weekly Exenatide Added to Basal Insulin in Patients with Type 2 Diabetes Mellitus
Grantor: AstraZeneca Pharmaceuticals, LP
Amount: $67,387
Awarded: July 2016

See-Won Seo, Jacqueline Cleary
Principal Investigator: See-Won Seo
Co-Principal Investigator: Jacqueline Cleary
Project: A System's Approach to Reducing the Burden of Asthma in New York State
Grantor: Whitney M Young Jr. Health Center
Amount: $12,800
Awarded: June 2016

HONORS AND APPOINTMENTS

Jeffrey Brewer
Fellow of the American Society of Health-System Pharmacists, 2016

Jacqueline Cleary
2016 PAINWeek Scholarship Recipient

Gina Garrison
National Secretary, Rho Chi Academic Honor Society, 2011-present

Nicole Lodise
American Association of Colleges of Pharmacy (AACP). Member, Tobacco Control Committee, Public Health Special Interest Group (2016- present).

American Association of Colleges of Pharmacy (AACP). Faculty Champion, Joint Council of Deans/Council of Faculties "Catalyst Team to Integrate the Joint Commission of Pharmacy Practitioners (JCPP) Pharmacists Patient Care Process (PPCP)" (2016-present).

American Association of Colleges of Pharmacy (AACP). Chair, Council of Faculties - Faculty Affairs Committee (COF-FAC) Workgroup on Curricular Adoption and Integration of the Pharmacists' Patient Care Process (2015-2016).

American Association of Colleges of Pharmacy (AACP). Chair, Section of Teachers of Pharmacy Practice Faculty Development Committee (Chair-2016-present).

American College of Clinical Pharmacy (ACCP). Member, Educational Affairs Committee (2016-present).

Nimish Patel
Society of Infectious Diseases Pharmacists: Impact Paper of the Year

Sarah Peters
President, Hematology/Oncology Pharmacy Association, 2016-17

DEPARTMENT OF PHARMACEUTICAL SCIENCES – ALBANY CAMPUS

PUBLICATIONS

PEER REVIEWED ARTICLES

James M. Gallo

Wang T, Pickard AJ, Gallo, JM. Histone Methylation by Temozolomide: A Classic DNA Methylating Agent. *Anticancer Research*, 36:3289-99, 2016.

Pickard AJ, Sohn AS, Bartenstein TF, He S, Zhang Y, Gallo JM. Intracerebral Distribution of the Oncometabolite D-2-Hydroxyglutarate in Mice Bearing Mutant Isocitrate Dehydrogenase Brain Tumors: Implications for Tumorigenesis. *Frontiers Oncology*, 6:211, 2016.

Marcel Musteata

Singh A, Bartiss R, Rahman T, Arabshahi A, Prasain J, Barnes S, Musteata FM, Sellati TJ. Lipoxin A4, a 5-lipoxygenase pathway metabolite, modulates immune response during acute respiratory tularemia. *Journal of Leukocyte Biology*, September 14, 2016 (published online before print).

Musteata FM, Sandoval M, Ruiz JM, Harrison K, McKenna D, Millington W. Rapid, Minimally Invasive Analysis of Amazonian Plants Using Solid Phase Microextraction, Phytochemical Fingerprinting, and LC-MS. *Analytica Chimica Acta*, 933, p. 124-133, 2016.

Musteata FM. Making Sense of Vitamin D Concentrations. *Future Science OA*, 2(1), doi 10.4155/fso.15.90, 2016.

HaiAn Zheng

Alsharif NZ, Abrons JP, Williams D, Zheng HA, Ombengi DN, Dakkuri A, AlDahir S, Tofade T, Gim S, O'Connell MB. Global/International Advanced Pharmacy Practice Experiences: Host Country, Site and Institution Considerations. *American Journal of Pharmacy Education*, 25;80(3):38. 2016

BOOK CHAPTERS

James M. Gallo

Birtwistle MR, Hansen J, Gallo JM, Muppirisetty S, Man-Ung P, Iyengar R, Schlessinger A. "Systems Pharmacology: An Overview" in *Systems Pharmacology and Pharmacodynamics*. D.E. Mager and H.C. Kimko, Eds., American Association of Pharmaceutical Scientists, Springer (ISBN: 978-3-319-44532-8), 2016.

HaiAn Zheng

Zheng HA, Crison J. "Drug Delivery and Product Design" in *Martin's Physical Pharmacy and Pharmaceutical Sciences*, 7th edition. Edited by Patrick Sinko, Lippincott Williams & Wilkins, December 2016, ISBN, 9781496353443.

Wu L, Smith H, Zheng HA, Yu L. "Drug Product Approval in the United States and International Harmonization" in *Developing Oral Solid Dosage Forms*. Academic Press, 2nd edition, November 2016, ISBN: 9780128024478.

CONFERENCE PRESENTATIONS

James M. Gallo

Planning and Scientific Committees and Moderator. 2nd CNS Anticancer Drug Discovery/Development Conference co-sponsored by Society of Neuro-Oncology in association with Annual meeting. Phoenix, AZ, November 16-17, 2016.

Gail Goodman-Snitkoff

The Microbiome in Health and Disease. Grand Rounds at Ellis Hospital, October 21, 2016.

Marcel Musteata

Mall I, Zheng HA, Musteata FM. Investigating transdermal diffusion of vitamin D and 25-hydroxyvitamin D. Pittcon 2016, Atlanta, GA, March 2016 and AAPS-NERDG, Farmington, CT, April 2016 (poster presentation).

HaiAn Zheng

Zheng HA, Teng J, Feinberg D. Teaching a Regulatory Science Course Blended with eLearning Lectures and Active Learning. AAPS Annual Meeting, San Diego, CA, November 13-17, 2016.

Hawke RL, Pereira HA, Allen DD, O'Barr SA, Poloyac S, Tropsha A, Zheng HA. Trends & Transformations within Graduate Education. AACP Annual Meeting, Anaheim, CA, July 23, 2016 (forum organizer/chair).

Zheng HA. China-US Clinical Pharmacy Experiential Education Exchange (CPEEE) Programs – Achievements, Challenges & Promises. Fudan University School of Pharmacy, Shanghai, May 28, 2016 (invited speaker).

Mall I, Zheng HA, Musteata FM. Investigating transdermal diffusion of vitamin D and 25-hydroxyvitamin D. AAPS-NERDG Annual Meeting, Farmington, CT, April 2016.

HONORS AND APPOINTMENTS

James M. Gallo

Appointed Associate Editor, PLOS: Computational Biology, September 2016.

DEPARTMENT OF PHARMACEUTICAL SCIENCES – VERMONT CAMPUS

PUBLICATIONS

PEER REVIEWED ARTICLES

Stefan Balaz

Kim S, Natesan S, Cornilescu G, Carlson S, Tonelli M, McClurg UL, Binda O, Robson CN, Markley JL, Balaz S, Glass KC. Mechanism of Histone H3K4me3 Recognition by the Plant Homeodomain of Inhibitor of Growth 3. *Journal of Biological Chemistry* 2016, 291, 18326-18341.

Subramaniam R, Jagadeesan R, Mathew I, Cen Y, Balaz S. Scalable Synthesis and Purification of Acetylated Phosphatidyl Choline Headgroup. *Organic Process Research & Development* (in revision).

Yana Cen

Wood M, Cen Y. Facile Synthesis of NaMN, NaAD

and Derivatives. *Annals of Pharmacology & Pharmaceutics*, 2016, 1, 1007.

Subramaniam R, Jagadeesan R, Mathew I, Cen Y, Balaz S. Scalable Synthesis and Purification of Acetylated Phosphatidyl Choline Headgroup. *Organic Process Research & Development*, 2017, 21, 177-181.

Tamer Fandy

Gunasekara DC, Zheng MM, Mojtahed T, Woods JR, Fandy TE, Riofski MV, Glackin CA, Hassan HE, Kirshner J, Colby DA. 15-Methylene-Eburnamonine Kills Leukemic Stem Cells and Reduces Engraftment in a Humanized Bone Marrow Xenograft Mouse Model of Leukemia. *ChemMedChem* 2016, 11, 2392-2397.

Fandy TE, Abdallah I, Khayat M, Colby DA, Hassan HE. In vitro characterization of transport and metabolism of the alkaloids: vincamine, vinpocetine and eburnamonine. *Cancer Chemotherapy and Pharmacology* 2016, 77, 259-267.

Hassan HE, Keita JA, Narayan L, Brady SM, Frederick R, Carlson S, Glass KC, Natesan S, Buttolph T, Fandy TE. The combination of dimethoxycurcumin with DNA methylation inhibitor enhances gene re-expression of promoter-methylated genes and antagonizes their cytotoxic effect. *Epigenetics* 2016, 11, 740-749.

Karen Glass

Kim S, Natesan S, Cornilescu G, Carlson S, Tonelli M, McClurg UL, Binda O, Robson CN, Markley JL, Balaz S, Glass KC. Mechanism of Histone H3K4me3 Recognition by the Plant Homeodomain of Inhibitor of Growth 3. *Journal of Biological Chemistry* 2016, 291, 18326-18341.

Hassan HE, Keita JA, Narayan L, Brady SM, Frederick R, Carlson S, Glass KC, Natesan S, Buttolph T, Fandy TE. The combination of dimethoxycurcumin with DNA methylation inhibitor enhances gene re-expression of promoter-methylated genes and antagonizes their cytotoxic effect. *Epigenetics* 2016, 11, 740-749.

Senthil Natesan

Hassan HE, Keita JA, Narayan L, Brady SM, Frederick R, Carlson S, Glass KC, Natesan S, Buttolph T, Fandy TE. The combination of dimethoxycurcumin with DNA methylation inhibitor enhances gene re-expression of promoter-methylated genes and antagonizes their cytotoxic effect. *Epigenetics* 2016, 11, 740-749.

Kim S, Natesan S, Cornilescu G, Carlson S, Tonelli M, McClurg UL, Binda O, Robson CN, Markley JL, Balaz S, Glass KC. Mechanism of Histone H3K4me3 Recognition by the Plant Homeodomain of Inhibitor of Growth 3. *Journal of Biological Chemistry* 2016, 291, 18326-18341.

CONFERENCE PRESENTATIONS

Stefan Balaz

Kim S, Natesan S, Cornilescu G, Carlson S, Tonelli M, McClurg UL, Binda O, Robson CN, Markley JL, Balaz S, Glass KC. Mechanism of Histone H3K4me3 Recognition by the Plant Homeodomain of Inhibitor of Growth 3. Keystone Symposium on Chromatin and Epigenetics, Whistler, BC, Canada, March 21, 2016 (poster presentation).

Kim S, Natesan S, Cornilescu G, Carlson S, Tonelli M, McClurg UL, Binda O, Robson CN, Markley JL, Balaz S, Glass KC. Histone Recognition by the ING3 PHD Finger in the TIP60 Histone Acetyltransferase Complex. Sixth Annual ACPHS Research Forum, Albany, NY, January 23, 2016 (Abstract).

Kim S, Natesan S, Cornilescu G, Carlson S, Tonelli M, McClurg UL, Binda O, Robson CN, Markley JL, Balaz S, Glass KC. Mechanism of Histone H3K4me3 Recognition by the Plant Homeodomain of Inhibitor of Growth 3. University of Vermont Cancer Center Clinical and Translational Research Symposium, Burlington, VT, April 29, 2016 (poster presentation).

Yana Cen

Graham E, Wood M, Rymarchyk S, Zhang K, Lin H, Cen Y. Chemical Biology Approach for Sirtuin Profiling. Sixth Annual ACPHS Research Forum, Albany, NY, January 23, 2016 (oral presentation).

Graham E, Rymarchyk S, Cen Y. Design and Synthesis of Activity-based Chemical Probes for Specific Sirtuin Isoforms. Sixth Annual ACPHS Research Forum, Albany, NY, January 23, 2016 (poster presentation).

Cen Y. Novel Probes for Sirtuins: a Chemical Biology Approach. University of Vermont, Burlington, VT, April 2016 (invited talk).

Graham E, Rymarchyk S, Wood M, Zhang K, Lin H, Cen Y. Activity-based Sirtuin Profiling. Clinical and Translational Research Symposium, University of Vermont, Burlington, VT, April 2016 (poster presentation).

Cen Y, Wood M, Fandy T. DNA Hypomethylating Agents Modulate the Activity of the Histone Deacetylase Sirtuin 6 (SIRT6). 2016 AAPS Annual Meeting and Exposition, Denver, CO, November 2016 (poster presentation).

Tran A, French J, Cen Y. Design and Synthesis of Dual-functional Nucleobase Analogs for Labeling Nucleobase Transporters. 2016 ACPHS Student Summer Research Presentation and Award Ceremony, Albany, NY, November 2016 (poster presentation).

Tamer Fandy

Cen Y, Wood M, Fandy T. DNA Hypomethylating Agents Modulate the Activity of the Histone Deacetylase Sirtuin 6 (SIRT6). 2016 AAPS Annual Meeting and Exposition, Denver, CO, November 2016 (poster presentation).

Karen Glass

Kim S, Natesan S, Cornilescu G, Carlson S, Tonelli M, McClurg UL, Binda O, Robson CN, Markley JL, Balaz S, Glass KC. Histone Recognition by the ING3 PHD Finger in the TIP60 Histone Acetyltransferase Complex. Sixth Annual ACPHS Research Forum, Albany, NY, January 23, 2016 (Abstract).

Lloyd JT, Gay JC, Carlson SA, Eckenroth BE, Doublie S, Glass KC. Histone Binding and Ligand Recognition by the ATAD2b Bromodomain. Sixth Annual ACPHS Research Forum, Albany, NY, January 23, 2016 (poster presentation).

Gay JC, Carlson SA, Glass KC. Using Isothermal Calorimetry to Determine ATAD2b Histone Binding Affinities. Sixth Annual ACPHS Research Forum, Albany, NY, January 23, 2016 (poster presentation).

Kim S, Natesan S, Cornilescu G, Carlson S, Tonelli M, McClurg UL, Binda O, Robson CN, Markley JL, Balaz S, Glass KC. Mechanism of Histone H3K4me3 Recognition by

the Plant Homeodomain of Inhibitor of Growth 3. Keystone Symposium on Chromatin and Epigenetics, Whistler, BC, Canada, March 21, 2016 (poster presentation).

Kim S, Natesan S, Cornilescu G, Carlson S, Tonelli M, McClurg UL, Binda O, Robson CN, Markley JL, Balaz S, Glass KC. Mechanism of Histone H3K4me3 Recognition by the Plant Homeodomain of Inhibitor of Growth 3. University of Vermont Cancer Center Clinical and Translational Research Symposium, Burlington, VT, April 29, 2016 (poster presentation).

Lloyd JT, Gay JC, Carlson SA, Eckenroth BE, Doublie S, Glass KC. Histone Binding and Ligand Recognition by the ATAD2b Bromodomain. University of Vermont Cancer Center Clinical and Translational Research Symposium, Burlington, VT, April 29, 2016 (poster presentation).

Gay JC, Carlson SA, Glass KC. Using Isothermal Calorimetry to Determine ATAD2b Histone Binding Affinities. University of Vermont Cancer Center Clinical and Translational Research Symposium, Burlington, VT, April 29, 2016 (poster presentation).

Evans C, Gay J, Glass KC. Functional characterization of the BPRF3 bromodomain. Summer Research Presentations and Honors and Awards Ceremony, Albany, NY, November 12, 2016 (poster presentation).

Senthil Natesan

Kim S, Natesan S, Cornilescu G, Carlson S, Tonelli M, McClurg UL, Binda O, Robson CN, Markley JL, Balaz S, Glass KC. Mechanism of Histone H3K4me3 Recognition by the Plant Homeodomain of Inhibitor of Growth 3. Keystone Symposium on Chromatin and Epigenetics, Whistler, BC, Canada, March 21, 2016 (poster presentation).

Kim S, Natesan S, Cornilescu G, Carlson S, Tonelli M, McClurg UL, Binda O, Robson CN, Markley JL, Balaz S, Glass KC. Histone Recognition by the ING3 PHD Finger in the TIP60 Histone Acetyltransferase Complex. Sixth Annual ACPHS Research Forum, Albany, NY, January 23, 2016 (Abstract).

Kim S, Natesan S, Cornilescu G, Carlson S, Tonelli M, McClurg UL, Binda O, Robson CN, Markley JL, Balaz S, Glass KC. Mechanism of Histone H3K4me3 Recognition by the Plant Homeodomain of Inhibitor of Growth 3. University of Vermont Cancer Center Clinical and Translational Research Symposium, Burlington, VT, April 29, 2016 (poster presentation).

PATENTS

Yana Cen

Sauve AA, Cen Y. "Reagents and Methods for Sirtuin Capture", U.S. Patent No. 9,290,791, March 22, 2016.

GRANTS

Karen Glass

Project: Mechanisms of Chromatin Binding and Selection by Family IV Bromodomains
Grantor: National Institutes of Health (R15 renewal)
Amount: $384,000
Term: February 1, 2016 – January 31, 2019

SCHOOL OF ARTS AND SCIENCES

DEPARTMENT OF BASIC AND CLINICAL SCIENCES

PUBLICATIONS

Sean Ali

Cafaro C, Ali SA. Maximum caliber inference and the stochastic Ising model. *Physical Review E*, 2016, 94 (5); 052145.

Cafaro C, Ali SA, Giffin A. On the Violation of Bell's Inequality for all non-Product Quantum States. *International Journal of Quantum Information,* 2016, 14 (3); 1630003.

Cafaro C, Ali SA, Giffin A. Thermodynamic Aspects of information Transfer in Complex Dynamical Systems. *Physical Review E*, 2016, 93 (2); 022114.

Cafaro C, Giffin A, Ali SA. Application of the maximum Relative Entropy Method to the Physics of Ferromagnetic material. *Physica A*, 2016, 455; 11-26.

Charles Bergeron

Boles NC, Stone T, Bergeron C, Kiehl TR. Big Data Access and Infrastructure: Case Studies in Data Repository Utility. Annals of the N*ew York Academy of Sciences*, Volume 1387, pages 112-123, published online on 1 November 2016.

Siedlik JA, Bergeron C, Cooper MA, Emmons R, Moreau W, Nabhan D, Gallagher P, Vardiman JP. Advanced treatment monitoring for athletes using unsupervised modeling techniques. *Journal of Athletic Training* 51(1), 74-81.

Christopher Cioffi

Cioffi CL, Liu S, Wolf MA, Guzzo PR, Sadalapure K, Parthasarathy V, Loong DT, J.; Maeng J-H, Carulli E, Fang X, Kalesh KA, Matta L, Choo SH, Panduga S, Buckle RN, Davis RN, Sakwa SA, Gupta P, Sargent BJ, Moore NA, Luche MM, Carr GJ, Khmelnitsky YL, Ismail J, Chung M, Bai M, Leong WY, Sachdev N, Swamina-

than S, Mhyre AJ. Synthesis and Biological Evaluation of N-((1-(4-(Sulfonyl) piperazin-1-yl)cycloalkyl) methyl) benzamide Inhibitors of Glycine Transporter-1. *Journal of Medicinal Chemistry* 2016, 59; 8473-8494.

Cioffi CL, Guzzo PR. Inhibitors of Glycine Transporter-1: Potential Therapeutics for the Treatment of CNS Disorders. *Current Topics in Medicinal Chemistry* 2016, 16; 3404-3437.

Cioffi C, Petrukhin KE, Johnson G. Recent developments in agents for the treatment of age-related macular degeneration and Stargardt disease. *2016 Medicinal Chemistry Reviews*, 51, chapter 16; 261-278.

Timothy LaRocca
LaRocca TJ, Sosunov SA, Shakerley NL, Ten VS, Ratner AJ. Hyperglycemic conditions prime cells for RIP1-dependent necroptosis. *Journal of Biological Chemistry*, June 2016, 291(26): 13753-61.

LaRocca TJ. Programmed cell death dynamics during hyperglycemia and ischemic brain injuries. *Journal of Neurology and Neurorehabilitation Research*, Nov 2016, 1(2): 4-12.

Meenakshi Malik
Ma Z, Russo VC, Rabadi SM, Catlett SV, Bakshi CS, Malik M. Elucidation of the Mechanism of Oxidative Stress Regulation in *Francisella tularensis*. *Molecular Microbiology,* 101(5):856-78. Sept. 2016.

Rabadi SM, Sanchez BC, Varanat M, Ma Z, Catlett SV, Melendez JA, Malik M, Bakshi CS. Antioxidant defenses of Francisella tularensis modulate macrophage function and production of proinflammatory cytokines. *Journal of Biological Chemistry*, 291(10):5009-21. March 2016.

Michael Racz
Hannan EL, Racz MJ, Walford G, Jacobs AK, Stamato NJ, Gesten F, Berger PB, Sharma S, King SB 3rd, (2016). Disparities in the use of drug-eluting coronary stents by race, ethnicity, payer and hospital. *Canadian Journal of Cardiology*, 32(16): 987. e25-987.e31.

H. John Sharifi
Furuya AKM, Sharifi HJ, Jellinger RM, Cristofano P, Shi B, de Noronha CMC (2016). Sulforaphane Inhibits HIV Infection of Macrophages through Nrf2. *PLoS Pathogens* 12(4): e1005581.

Binshan Shi
Watanabe S, Simon V, Kemp B, Machihara S, Kemal K, Shi B, Foley B, Weiser B, Burger H, Anastos K, Chen C, Carter C. The HIV-1 Late Domain-2 S40A Polymorphism in Antiretroviral (or ART)-Exposed Individuals Influences Protease Inhibitor Susceptibility. *Retrovirology*, 2016; 13(1):64.

Furuya AKM, Sharifi HJ, Jellinger RM, Cristofano P, Shi B, de Noronha CMC (2016). Sulforaphane Inhibits HIV Infection of Macrophages through Nrf2. *PLoS Pathogens* 12(4): e1005581.

Ebot Tabe
Tabe N, Rahman S, Tabe ES, Doetkott D, Khaitsa M (2016). Shigatoxin producing *Escherichia coli* and *Salmonella* spp burden in cattle feedlot runoff from two cattle feedlot facilities. *North Dakota Food Protection Trends*, Vol 36, No. 1, pp. 33-42.

Eric Yager
Kohlmeier JE, Ely KH, Connor LM, Yager EJ, Woodland DL, Blackman MA. Beneficial and detrimental manifestations of age on CD8+ T-cell memory to respiratory pathogens. *Handbook on Immunosenescence: Basic Understanding and Clinical Applications*, Eds. T. Fulop, C. Franceschi, K. Hirokawa and G. Pawelec. Springer Netherlands, 2016.

PRESENTATIONS

Charles Bergeron
Bergeron C, Stone T, Kiehl TR. A pipeline for a growing data resource: Electrophysiological behavior of in-vitro cell cultures. Meeting of the National Science Foundation Workshop on Data Science, Learning, and Applications to Biomedical and Health Sciences, New York City, New York, Jan 7-8, 2016.

Stone T, Kiehl TR, Bergeron C. Cutting through the spatial scale complexity of multielectrode array neuron recordings. New York Academy of Sciences Symposium on Neuronal Connectivity in Brain Function and Disease: Novel Mechanisms and Therapeutic Target, New York City, NY, March 22, 2016 (abstract and poster presentation)

James Doyle
Doyle J, Teng J. Cyber-CYP: A Student Self-Directed Interactive Tool for Learning Cytochrome P450. EdMedia 2016 Conference, Vancouver, BC, June 29, 2016 (oral presentation).

Peter R. Guzzo
Guzzo PR. ConSynance: An Emerging Drug Discovery Company. Capital Region Biotechnology Innovation Day, Troy, NY, September 16, 2016.

Guzzo PR. Novel Therapeutics for Inflammatory Bowel Disease and Irritable Bowel Syndrome. BIO International Convention, San Francisco, CA, June 7, 2016.

Guzzo PR. Novel Therapeutics for Inflammatory Bowel Disease and Irritable Bowel Syndrome. New York BIO Convention, New York City, NY, May 11, 2016.

Timothy LaRocca
LaRocca TJ. Hyperglycemia upregulates necroptosis. Long Island University Post, Brookville, NY, May 23, 2016 (invited oral presentation).

LaRocca TJ, Sosunov SA, Shakerley NL, Ten VS, Ratner AJ. High glucose sensitizes host cells to necroptosis in response to bacterial pore-forming toxins and inflammatory signals. ASM Microbe General Meeting, Boston, MA, June 16-20, 2016 (poster presentation).

Shakerley NL, Craft M, Smiraglia TA, Payal PS, Sosunuv S, Ten VS, LaRocca TJ. Hyperglycemia primes cells for programmed cell death shift in a glycolysis-dependent manner. 22nd Society for Radical Biology and Medicine Meeting, San Francisco, CA, November 16-19, 2016 (poster presentation).

Shakerley, NL, Smiraglia TA, Patel PS, Walker KM, Craft M, Sosunov SA, Ten VS, LaRocca TJ. Hyperglycemia potentiates a shift from apoptosis to necroptosis. Eastern New York Student Chapter of the American Society for Microbiology, Albany, NY, November 17, 2016 (poster presentation).

Jenna LeBlanc
Envision Your Value, Advocate for the Future. American Society of Cytopathology Annual Scientific Meeting, New Orleans, LA, November 2016.

Meenakshi Malik
Oliva G, Shah R, Lu J, Catlett SV, Pai MP, Rose

WE, Sakoulas G, Malik M. Characterization of gene expression in profile associated with daptomycin nonsusceptibility in Staphylococcus aureus. Poster presented in 116th General Meeting of American Society for Microbiology, Boston, MA, June 16-19, 2016.

Ma Z, Russo V, Rabadi SM, Catlett SV, Bakshi CS, Malik M. Elucidation of the mechanism of oxidative stress regulation in Francisella tularensis. Poster presented in 116th General Meeting of American Society for Microbiology, Boston, MA, June 16-19, 2016.

Marghani D, Ma Z, Malik M, Bakshi CS. Characterization of the role of Transcriptional Regulator AraC of Francisella tularensis. Poster presented in 116th General Meeting of American Society for Microbiology, Boston, MA, June 16-19, 2016.

Michael Racz
Gumustop S, Nair AA, Meek PD, Racz MJ, O'Grady TJ, Gumustop B. Regional patterns of pancreatectomy case volumes and in-hospital mortality in New York State between 1999-2014. Digestive Disease Week, May 2016, San Diego, CA (poster presentation).

Nair AA, Gumustop SB, Racz MJ, O'Grady TJ, Polimeni JM, Gumustop B, Meek PD. Temporal trends in utilization of pancreatectomy procedures in New York State: 1999-2014. International Society for Pharmacoeconomics and Outcomes Research 21st Annual International Meeting, May 2016, Washington, DC (poster presentation).

Binshan Shi
Kinnetz M, Shi B. The Inhibition of Retrovirus Reverse Transcription by p53. Annual Meeting of the American Society for Clinical Laboratory Science, August 1-4, 2016, Philadelphia, PA (oral presentation).

Ebot Tabe
Tabe E. A Salicylate Derivative-Enhanced Antimicrobial Activity of a Synthetic Peptide against Pseudomonas aeruginosa in-vitro. Public Health and Emerging Microbial Threats 14th Annual International Conference, September 19, 2016, Albany College of Pharmacy and Health Sciences, Albany, NY.

GRANTS

Timothy LaRocca
Project: Mechanisms and outcomes of erythrocyte necroptosis
Grantor: National Institutes of Health
Amount: $480,000
Term: December 1, 2016 – November 30, 2019

Meenakshi Malik
Project: Repression of inflammasome by *Francisella tularensis*
Grantor: National Institutes of Health
(R15 renewal)
Amount: $480,000
Term: December 1, 2016 – November 30, 2019

Project: Modeling the emergence of antimicrobial resistance
Role: Co-Principal Investigator
Grantor: Wadsworth Center and ACPHS
Amount: $375,000
Term: February 16, 2016 – February 15, 2019

HONORS AND APPOINTMENTS

Peter R. Guzzo (Patents)
Kharenko O, Young PR, Brown SD, Duffy BC, Liu S, Guzzo PR. Inhibitors of bromodomains. WO 2016/097863, June 23, 2016.

Guzzo PR, Manning DD. Ligand-therapeutic agent conjugates, silicon-based linkers, and methods for making and using them. U.S. Patent No. 9,352,049: May 31, 2016.

Guzzo PR, Surman MD, Henderson AJ, Jiang, MX, Hadden M, Grabowski J. 1-Azinone-substituted pyridoindoles. U.S. Patent No. 9,296,743: March 29, 2016.

Jenna LeBlanc
President Elect, American Society for Cytotechnology

Nicole Shakerley
Young Investigator Award from the Society for Radical Biology and Medicine

Binshan Shi
Winning Research Paper at 2016 Education Scientific Assembly Student Awards competition (with Michaela Kinnetz)

Ebot Tabe
Young Scholar Award from Dova Press on the occasion of the 14th annual conference on Public Health and Emerging Microbial Threats.

DEPARTMENT OF POPULATION HEALTH SCIENCES

PUBLICATIONS

Allison M. Burton-Chase
Burton-Chase AM, Parker WM, Hennig K, Sisson F, Bruzzone L. The use of social media to recruit participants with rare conditions: Lynch syndrome as an example. *JMIR Research Protocols* (in press).

Katz LH, Burton-Chase AM, Advani S, Fellman F, Polivka KM, Ying Y, Lynch PM, Pande M, Peterson SK. Screening adherence and cancer risk perceptions in family members of colorectal cancer survivors with Lynch-like syndrome. *Familial Cancer* (in press).

Silvera SAN, Burton-Chase AM, Phillips L, Thompson CL, Stolley M, Chang S. Creating and managing a work/life balance as a junior investigator in the academic environment – A report from the American Society of Preventive Oncology's Junior Members Interest Group. *Cancer Epidemiology, Biomarkers & Prevention* (in press).

Burton-Chase AM, Kwak J, Hennig K, Haley WE. Elder Caregiving. In *Reference Module of Neuroscience and Biobehavioral Psychology*. New York: Elsevier (in press).

Rogith D, Yusuf RA, Hovick SR, Fellman BM, Peterson SK, Burton-Chase AM, Li Y, Bernsam EV, Meric-Bernstam F. (2016) Patient knowledge and Information seeking about personalized cancer therapy. *International Journal of Medical Informatics*, 88; 52-57.

Katz LH, Burton-Chase AM, Advani S, Fellman F, Polivka K, Ying Y, Lynch PM, Pande M, Peterson SK. (2016) Screening adherence and cancer risk perceptions in colorectal cancer survivors with Lynch-like syndrome. *Clinical Genetics*, 89 (3); 392-398.

Wendy Parker

Polimeni JM, Iorgulescu RI, Almalki A, Albu L, Parker WM, Chandrasekara R. (2016) Assessment of Macro-level Socioeconomic Factors that Impact Waterborne Diseases: The Case of Jordan. *International Journal of Environmental Research and Public Health.* 13(12):1181. doi: 10.3390/ijerph13121181.

Parker WM, Ferreira K, Vernon L, Cardone KE. (2016) The Delicate Balance of Keeping It All Together: Using Social Capital to Manage Multiple Medications for Patients on Dialysis. Research in *Social and Administrative Pharmacy,* S1551-7411(16)30312-6. PMID: 27567742 DOI: 10.1016/j.sapharm.2016.07.008.

Campo-Engelstein L, Santacrose LB, Master Z, Parker WM. (2016) Bad Moms and Blameless Dads: The Portrayal of Maternal and Paternal Age and Preconception Harm in U.S. Newspapers. *American Journal of Bioethics: Empirical Bioethics,* 7(1): 56-63. DOI:10.1080/23294515.2015.1053007.

PRESENTATIONS

Allison M. Burton-Chase

Hennig K, Chu R, DeCoster B, LeBorgne A, Parker WM, Campo-Engelstein L, Burton-Chase, AM. The impact of care coordination on provider satisfaction in Lynch syndrome survivors and previvors. Poster presented at the Albany College of Pharmacy and Health Sciences Student Summer Research Award Day, Albany, NY, November 2016.

Burton-Chase AM, Hennig K, LeBorgne A, Chu R, Campo-Engelstein L, Parker WM. The impact of care coordination on provider satisfaction in Lynch syndrome survivors and previvors. Poster presented at the 20th Annual Meeting of the Collaborative Group of the Americas on Inherited Colorectal Cancer (CGA-ICC), Seattle, WA, October 2016.

Hennig K, Chu R, DeCoster B, LeBorgne A, Parker WM, Campo-Engelstein L, Burton-Chase AM. The impact of care coordination on provider satisfaction in Lynch syndrome survivors and previvors. Poster presented at the 20th Annual Meeting of the Collaborative Group of the Americas on Inherited Colorectal Cancer (CGA-ICC), Seattle, WA, October 2016.

Chikermane S, Polimeni J, Burton-Chase AM, Chandrasekara R, O'Grady T. Effects of education and other socioeconomic variables on HIV seroprevalence in Russia, India, South Africa, and the United States of America. Poster presented at the 21st Annual International Meeting of the International Society for Pharmacoeconomics Research (ISPOR), Washington, DC, May 2016.

Parker WM, Donato KM, Burton-Chase AM. Preventive screening and risk for women with Lynch syndrome: Initial results of a case-control study. Poster presented at the 4th Annual Capital District Feminist Studies Consortium Conference, Albany, NY, January 2016.

Paul Denvir

Williams I, Denvir P. I Didn't Want Them to Tear Apart Everything I Said: Patient and Provider Perspectives on Sexual Assault Disclosure. Presented at North American Primary Care Research Group (NAPCRG) Annual Meeting, November 2016.

Williams I, Denvir P. Survivors' disclosure of sexual assault to health care providers: A pilot study on disclosure barriers and consequences. Presented at the 3rd Annual ACPHS Student Research Symposium at Albany College of Pharmacy and Health Sciences, April 2016.

Adamec A, Courtney K, Donato KM, Denvir P. Communication challenges in recruiting patients for medication therapy management (MTM): How to address patient resistance to participating in MTM. Presented at the 3rd Annual ACPHS Student Research Symposium at Albany College of Pharmacy and Health Sciences, April 2016.

Yehia A, Denvir P. Adherence talk: Pharmacists' perspectives on challenges and strategies of patient-centered communication. Presented at the 6th Annual ACPHS Research Forum at Albany College of Pharmacy and Health Sciences, January 2016.

Thomas O'Grady

Chikermane S, Polimeni J, Burton-Chase AM, Chandrasekara R, O'Grady T. Effects of education and other socioeconomic variables on HIV seroprevalence in Russia, India, South Africa, and the United States of America. Poster presented at the 21st Annual International Meeting of the International Society for Pharmacoeconomics Research (ISPOR), Washington, DC, May 2016.

Gumustop S, Nair AA, Meek PD, Racz MJ, O'Grady TJ, Gumustop B. Regional patterns of pancreatectomy case volumes and in-hospital mortality in New York State between 1999-2014. Poster presented at Digestive Disease Week, San Diego, CA, May 2016.

Nair AA, Gumustop SB, Racz MJ, O'Grady TJ, Polimeni JM, Gumustop B, Meek PD. Temporal trends in utilization of pancreatectomy procedures in New York State: 1999-2014. Poster presented at International Society for Pharmacoeconomics and Outcomes Research 21st Annual International Meeting, Washington, DC, May 2016.

Wendy Parker

DeCoster B, Parker WM. Alliances in Women's Health: Our Bodies, Ourselves. Invited presentation at Rensselaer Polytechnic Institute's Colloquium, Science, and Technology Studies Department, March 9, 2016.

Parker WM. Health Disparities. Invited presentation at Albany Medical College, Health Care and Society Course, 2016.

Parker WM, DeCoster B. Archives of the Women's Health Movement and the Boston Women's Health Collective: Evidence of virtues for seeking and building alliances in healthcare. Presentation at the Association for Bioethics and Humanities, Washington DC, October 6-9, 2016.

Aziz R, Darivelmula S, Raffaele J, Bhatia R, Parker WM, Campo-Engelstein L. Freezing Fertility or Freezing False Hope? A Content Analysis of the Portrayal of Social Egg Freezing in the US Print Media. Presentation at the

Association for Bioethics and Humanities, Washington DC,
October 6-9, 2016.

Parker WM, Donato KM, Nnani D, Grabe D. Disparities in Hypertension Among Women: Exploring Social, Economic and Health-Related Risk Factors. Concordium 2016, Crystal City, VA, September 11-12, 2016.

Wegrzyn NM, Parker WM, Pai AB, Daoui R, Daoui S, Cardone, KE. Health Literacy and Self-Management of Medications Among Patients at an Outpatient Nephrology Office. Poster presented at Academy Health, Boston, MA, June 2016.

Wegrzyn NM, Parker WM, Pai AB, Daoui R, Hogan-Moulton A, Cardone KE. Assessing health literacy in outpatient nephrology patients. National Kidney Foundation Spring Clinical Meeting, Boston, MA, April 2016.

Parker WM, DeCoster B. Archives of the Women's Health Movement and the Boston Women's Health Collective: Evidence of virtues for seeking and building alliances in healthcare. Presentation at Eastern Sociological Society mini-conference on the Sociology of Reproduction,
March 17-20, 2016.

DeCoster B, Parker WM. Alliance Building in Women's HealthCare. Presentation at Association for Practical and Professional Ethics, February 18-21, 2016.

O'Neil G, Parker WM. Behind the Bump: Women's Decision Making and Expectations of Assisted Reproduction. Presentation at Eastern Sociological Society mini-conference on the Sociology of Reproduction, March 17-20, 2016.

Aziz R, Darivelmula S, Raffaele J, Bhatia R, Parker WM, Campo-Engelstein L. Freezing Fertility or Freezing False Hope? A Content Analysis of the Portrayal of Social Egg Freezing in the US Print Media. Poster presented at Capital District Feminist Studies Conference, Troy, NY, January 2016.

Parker WM, Donato KM, Burton-Chase AM. Preventive screenings and risks for women with Lynch syndrome: Initial results from a case-control study. Poster presented at Capital District Feminist Studies Conference, Troy, NY, January 2016.

O'Neil G, Parker WM. Behind the Bump: Women's Decision Making and Expectations of Assisted Reproduction, Poster presented at Capital District Feminist Studies Conference, Troy, NY, January 2016.

HONORS AND APPOINTMENTS

Allison M. Burton-Chase
Top-Rated Poster Award, Collaborative Group of the Americas on Inherited Colorectal Cancer (CGA-ICC) Annual Meeting, October 2016

Vice Chair, Early Career Special Interest Group, American Society of Preventive Oncology

Member, Medical Advisory Board, Alive and Kickn Colorectal Cancer Patient Advocacy Organization

Paul Denvir
Chair, Language and Social Interaction Division of National Communication Association

Wendy Parker
Member, Alliance for Better Health Care, Cultural Competency and Health Literacy Task Force

GRANTS

Wendy Parker
Principal Investigator: Wendy M. Parker
Co-Principal Investigator: Katie E. Cardone
Project: Health disparities and medication management strategies among adolescents and young adults with Diabetes Mellitus
Grantor: John Faunce and Alicia Tracy Roach Fund
Amount: $24,943.36

John Polimeni
Project: An Annotated Bibliography of Calculating Economic Rent
Grantor: Robert Schalkenbach Foundation
Amount: $500
Term: June 1, 2016 - August 31, 2016

DEPARTMENT OF HUMANITIES AND COMMUNICATION

PUBLICATIONS

PEER REVIEWED ARTICLES

Margaret Carroll
Carroll M. Lough Foyle Naval Air Station: WWI Memories. *Donegal Annual*, 2016, No. 68.

Carroll M. Martin Glynn's Newspaper Editorials: Constructing Albany's Answers to the Irish Questions, 1913-1924. *Nordic Irish Studies Journal*, Vol. 14, 2015, pp. 111-126.

Barry DeCoster
DeCoster B, Campo-Engelstein L. Expedited Partner Therapy: Clinical Considerations and Public Health Explorations. *AMA Journal of Ethics* 18, no. 3 (March 1, 2016): 215–28.

Rose Hitt
Smith S, Hitt R, Russell J, Silk K, Nazione S, Atkin C, Keating D. Risk Belief and Attitude Formation From Translated Scientific Messages About PFOA, an Environmental Risk Associated With Breast Cancer. *Health Communication*, doi:10.1080/10410236.2016.1138350 (published online, May 2016).

Smith SW, Hitt R, Park HS, Walther JB, Liang J, Hseih G. An Effort to Increase Organ Donor Registration through Intergroup Competition and Social Media: A Study of Two College Campus Organ Donation Challenge Campaigns. *Journal of Health Communication* (published online, January 2016).

Hitt R, Perrault E, Smith S, Keating D, Nazione S, Silk K, Russell J. (2016). Scientific message translation and the Heuristic Systematic Model: Insights for designing educational messages about progesterone and breast cancer risks. *Journal of Cancer Education,* 31, 389-936. doi: 10.1007/s13187-015-0835-y.

Michael Pittman
Pittman M. Through the Lens of Gurdjieff: Glimpses of Contemporary Sufism in Turkey. *Fieldwork in Religion*, Vol 11, No. 1 (2016).

REVIEW ARTICLES

Kenneth Blume
Brad K. Berner. The Spanish-American War. A Documentary History with Commentaries. (Fairleigh Dickinson University Press, 2014), for *International Journal of Maritime History.* May 2016.

Renata E. Long. In the Shadow of the Alabama. The British Foreign office and the American Civil War (Naval Institute Press, 2015), for Naval Historical Foundation, *Naval History Book Reviews*, Feb. 2016.

Stewart Gordon. A History of the World in Sixteen Shipwrecks (University Press of New England, 2015), for *Steamship Historical Society Power Ships*, Spring 2016.

J. Daniel d'Oney
"Hubs of Empire: The Southeastern Lowcountry and British Caribbean" in *American Indian Culture and Research Journal*, Volume 39, No. 3, 2015: 148-149.

BOOKS

Kenneth Blume
Historical Dictionary of U.S. Diplomacy from the Civil War to World War I, Rev. Ed. Rowman and Littlefield, 2016.

PRESENTATIONS

POSTER PRESENTATIONS

Denise L. Coblish
Preparing Your Writing Center for the Next Wave of International Students. National Association for Development Education (NADE) Annual Conference, Anaheim, CA, March 17, 2016.

INVITED PRESENTATIONS

Margaret Carroll
Carroll M. Dylan Thomas: An Introduction. Lecture delivered before a reading of "A Child's Christ-mas in Wales," Irish American Heritage Museum, Albany, NY, December 2, 2016.

Carroll M. Albany's Catholics in a Protestant Republic. Researching New York Conference, Albany, NY, November 17-19, 2016.

Carroll M. Alice McDermott's *Someone*. New England Regional American Conference of Irish Studies, Cape Cod, MA, November 4-5, 2016.

Carroll M. Bloomsday 2016: Ulysses Unbound: Readings and Ramblings. Irish American Heritage Museum, Albany, NY, June 2016.

Carroll M. Father Daniel W. Cahill: The Irish Letters Home. American Conference for Irish Studies, South Bend, IN, March 25-29, 2016.

Carroll M. Lady Gregory's "The Rising of the Moon," a critical introduction. Irish American Heritage Museum, February 2016.

Barry DeCoster
DeCoster B. The Social Determinants of Health and Medicalization. Health, Care, and Society first year medical student course at Albany Medical College, Feb 10, 2016.

DeCoster B, Parker W. Alliance Building in Women's Healthcare. Association for Practical and Professional Ethics, Washington, DC, February 20, 2016.

Kevin Hickey
Hickey K. Walking with Abel: Journeys with the Nomads of the African Savannah by Anna Badkhen. Friends of Albany Public Library Book Review Series, Albany, NY, June 14, 2016.

Hickey K. Chair of "Music and Art as a Force of Political Expressivity." 41st Annual New York African Studies Association Conference, New York, NY, April 1, 2016.

Michael Pittman
Travels in Gurdjieff's Milieu: Armenia and Turkey. All and Everything Humanities Conference, Salem, MA, April 20-14, 2016 (Invited Presentation).

PODIUM PRESENTATIONS

Margaret Carroll
Carroll M. The Famine Irish in Albany, NY: Irish please apply. International Association for the Study of Irish Literatures, Cork, Ireland, July 25-31, 2016.

Barry DeCoster
DeCoster B. Is 'Demedicalization' Possible as a Goal for Feminist Health? Feminist Epistemology, Metaphysics, Methodologies, and Science Studies Conference, South Bend, IN, October 2-4, 2016 (paper presentation).

DeCoster B, Campo-Engelstein L. Good Public Health Policy or Sexual Minority Exclusion? Rethinking Expedited Partner Therapy. American Society for Bioethics and Humanities, Washington DC, October 6-9, 2016 (paper presentation).

DeCoster B. Is 'Demedicalization' Possible as a Goal for Feminist Health? American Society for Bioethics and Humanities, Washington, DC, October 6-9, 2016 (paper presentation).

DeCoster B, Parker W. Virtues for Seeking Alliances in Healthcare: Archives of Our Bodies, Ourselves. American Society for Bioethics and Humanities, Washington, DC, October 6-9, 2016 (paper presentation).

Kevin Hickey
Jazzed Images – The Ornithological Arguments of Jean-Michel Basquiat. 41st Annual New York African Studies Association Conference on "Music and the Arts of Africa and the Diaspora," City College of New York and Columbia University, April 1, 2016 (Podium Presentation).

Rose Hitt
Hitt R, Zuang J, Anderson J. Breastfeeding Beliefs: Content Analysis of Newspaper Coverage. Annual Meeting of the National Communication Association, Philadelphia, PA, November 2016.

Hitt R, Zuang J, Anderson J. Breastfeeding topics in U.S. newspapers. Annual Meeting of the National Communication Association, Philadelphia, PA, November 2016.

Michael Pittman
Influences in Contemporary Spirituality: The Cultural, Religious, and Spiritual Roots of G.I. Gurdjieff in the Caucasus and Anatolia. American Academy of Religion Regional Conference (North Eastern-Maritimes Region), Boston College School of Theology & Ministry, Boston, MA, April 2, 2016.

Laura Rogers
Rogers L. Public Archives, Shared Spaces: What Happens When Incarcerated Men Meet the "Incorrigible Girls" of New York. Conference on College Composition and Communication, Houston, TX, April 6-9 2016.

Rogers L, Santicola T, Bogari K,Courtney K, Kaley A, Pluckrose D, Olszewski K, Yehia A. If

You Try and Make Every Paper Look the Same; Tutors, Teachers, and Students Explore the Grand Narratives of Science Writing. Northeast Writing Center Association Conference, Keene, NH, April 2-3, 2016.

Daniel Smith
Smith D. Radical Politics and Labor Organization: Leon Davis and the Pharmacists' Union of Greater New York. Researching New York Conference, University at Albany, Albany, NY, November 17-19, 2016 (Paper Presentation).

HONORS AND APPOINTMENTS

Kevin Hickey
President of the New York African Studies Association (current).

Organizer of 41st Annual New York African Studies Association Conference (April 1-2, 2016).

CENTER FOR INNOVATIVE LEARNING

PUBLICATIONS

Judy Teng
Doyle J, Teng J. Cyber-CYP: A Student Self-Directed Interactive Animation Tool for Learning Cytochrome P450. *Proceedings of EdMedia: World Conference on Educational Media and Technology* 2016 (pp. 1624-1629), Association for the Advancement of Computing in Education.

CONFERENCE PRESENTATIONS

Tammy Garren
Garren T, Skylstad K. Flex Your Pedagogical Muscles: Designing a Flex Learning Module. Online Learning Consortium Accelerate International Conference, Orlando, FL, November 2016 (Pre-conference workshop).

Garren T, Obos L. Two-Phase Pharmacy Skills Laboratory Video Project: Student Reactions and Effect on Lab Performance. American Association of Colleges of Pharmacy Annual Conference, Anaheim, CA, July 2016 (poster session).

Jennifer McVay-Dyche
Lewis KO, McVay-Dyche JM. Practical tools for creating and sourcing video-based lessons: Screencasts and TED-Ed. Workshop presented at the Online Learning Consortium's Accelerate Conference, Lake Buena Vista, FL, November 2016.

Lewis KO, McVay-Dyche JM. One size does not always fit all: How to tell if your rubric works. Express workshop presented at the Online Learning Consortium's Accelerate Conference, Orlando, FL, November 2016.
McVay-Dyche JM, Tedesco L. Building the infrastructure for innovative collaborative course design and development. Education session presented at the Online Learning Consortium's Innovate Conference, New Orleans, LA, April 2016.

McVay-Dyche JM. Balancing act: Creating online videos that honor your teaching style without a full scale video production team. Information session presented Online Learning Consortium's Innovate Conference, New Orleans, LA, April 2016.

Fleming G, McVay-Dyche JM. The improved student experience. Presentation at the Quality Matters Regional Conference, New York, NY, March 2016.

Judy Teng
Doyle J, Teng J. Cyber-CYP: A Student Self-Directed Interactive Animation Tool for Learning Cytochrome P450. EdMedia, World Conference on Educational Media & Technology, Vancouver, BC, June 2016.

Teng J. Instructional Design Support for Pharmacy Educators: Project-Based Model and Beyond. American Association of Colleges of Pharmacy Annual Meeting, Anaheim, CA, July 2016.

Zheng A, Feinberg D, Teng J. Design and Teaching a Regulatory Science Course Blended with eLearning Lectures and Active Learning. American Association of Pharmaceutical Scientists Annual Meeting and Exposition, Denver, CO, November 2016.

O'Neil E, Teng J, Gauthier A, Currie C. Instructional Design for Everyone. NorthEast Regional Computing Program, Affiliation of EDUCAUSE, Worcester, MA, November 2016 (Invited Panelist).

HONORS AND APPOINTMENTS

Tammy Garren
Garren T. 2016 MERLOT Peer Reviewer Extraordinaire Award. The Multimedia Educational Resource for Learning and Online Teaching (MERLOT), May 2016.

PHARMACEUTICAL RESEARCH INSTITUTE

PUBLICATIONS

PEER REVIEWED ARTICLES

Shaker A. Mousa

Abouelnaga A, Mutawa GA, Abdelghaffar H, Sobh M, Hamed S, Mousa SA. Establishment and characterization of primary human ovarian cancer stem cell line (CD44+ve). *Journal of Cancer Research Updates* 2016;5(2).

Acheampong A, Mousa SA. Targeting strategies of cancer stem cells in the management of solid tumors. *Journal of Stem Cell Research and Transplantation* 2016;3(1):1023.

Alshaiban A, Muralidharan-Chari V, Nepo A, Mousa SA. Modulation of sickle red blood cell adhesion and its associated changes in biomarkers by sulfated nonanticoagulant heparin derivative. *Clinical and Applied Thrombosis and Hemostasis* 2016;22(3):230-238.

Ardawi MS, Badawoud MH, Hassan SM, Rouzi AA, Ardawi JM, AlNosani NM, Qari MH, Mousa SA. Lycopene treatment against loss of bone mass, microarchitecture and strength in relation to regulatory mechanisms in a postmenopausal osteoporosis model. *Bone* 2016;83: 127-140.

Brady SM, Shapiro L, Mousa SA. Current and future direction in the management of scleroderma. *Archives of Dermatological Research* 2016;308(7):461-471.

Darwish NH, Sudha T, Godugu K, Elbaz O, Abdelghaffar HA, Hassan EE, Mousa SA. Acute myeloid leukemia stem cell markers in prognosis and targeted therapy: Potential impact of BMI-1, TIM-3 and CLL-1. *Oncotarget* 2016;7(36):57811-57820.

Davis PJ, Glinsky GV, Lin HY, Mousa SA. Actions of thyroid hormone analogues on chemokines. *Journal of Immunology Research* 2016;3147671.

Della Badia LA, Elshourbagy NA, Mousa SA. Targeting PCSK9 as a promising new mechanism for lowering low-density lipoprotein cholesterol. *Pharmacology & Therapeutics* 2016;164: 183-194.

ElFar AH, Shaheen HM, ElDaim MA, Jaouni SKA, Mousa SA. Date palm (phoenix dactylifera): Protection and remedy food. *Current Trends in Nutraceuticals* 2016;1(2).

Falcone R, Davis PJ, Stain SC, Mousa SA. Emerging therapies for pancreatic ductal carcinoma. *Journal of Solid Tumors* 2016;6(1): 65-77.

Hercbergs A, Davis PJ, Lin HY, Mousa SA. Possible contributions of thyroid hormone replacement to specific behaviors of cancer. *Biomedicine & Pharmacotherapy* 2016;84:655-659.

Hsieh MT, Wang LM, Changou CA, Chin YT, Yang YS, Lai HY, Lee SY, Yang YN, Whang-Peng J, Liu LF, Lin HY, Mousa SA, Davis PJ. Crosstalk between integrin αvβ3 and ERα contributes to thyroid hormone-induced proliferation of ovarian cancer cells. *Oncotarget* 2016:Jul 21. Apr 11 [Epub];8(15):24237-24249.

Lin HY, Chin YT, Nana AW, Shih YJ, Lai HY, Tang HY, Leinung M, Mousa SA, Davis PJ. Actions of l-thyroxine and nano-di-amino-tetrac (nanotetrac) on PD-L1 in cancer cells. *Steroids* 2016;114:59-67.

Muralidharan-Chari V, Kim J, Abuawad A, Naeem M, Cui H, Mousa SA. Thymoquinone modulates blood coagulation in vitro via its effects on inflammatory and coagulation pathways. International *Journal of Molecular Sciences* 2016;17(4):474.

Muralidharan-Chari V, Kohan HG, Asimakopoulos AG, Sudha T, Sell S, Kannan K, Boroujerdi M, Davis PJ, Mousa SA. Microvesicle removal of anticancer drugs contributes to drug resistance in human pancreatic cancer cells. *Oncotarget* 2016;7(31):50365-50379.

Muralidharan-Chari V, Mousa SA. Heparin neutralizer anticoagulant reversal agent. *Drugs of the Future* 2016;41(6):341-346.

Rajabi M, Mousa SA. Lipid nanoparticles and their application in nanomedicine. *Current Pharmaceutical Biotechnology* 2016;17(8):662-672.

Rajabi M, Sudha T, Darwish NH, Davis PJ, Mousa SA. Synthesis of MR-49, a deiodinated analog of tetraiodothyroacetic acid (tetrac), as a novel pro-angiogenesis modulator. *Bioorganic & Medicinal Chemistry Letters* 2016;26(16):4112-4116.

Sahli ZT, Jo J, Mousa SA, Tarazi FI. Clinical management of restless legs syndrome in end-stage renal disease patients. *CNS Spectrums* 2016:1-8.

Yang YC, Chin YT, Hsieh MT, Lai HY, Ke CC, Crawford DR, Lee OK, Fu E, Mousa SA, Grasso P, Liu LF, Chang HY, Tang HY, Lin HY, Davis PJ. Novel leptin OB3 peptide-induced signaling and progression in thyroid cancers: Comparison with leptin. *Oncotarget* 2016; 7(19):27641-27654.

Radak D, Katsiki N, Resanovic I, Jovanovic A, Sudar-Milovanovic E, Zafirovic S, Mousa SA, Isenovic ER. Apoptosis and acute brain ischemia in ischemic stroke. *Current Vascular Pharmacology* 2016 Nov 3. [Epub ahead of print].

Zappa C, Mousa SA. Non-small cell lung cancer: Current treatment and future advances. *Translational Lung Cancer Research* 2016;5(3):288-300.

Zheng Y, Miao J, Zhang F, Cai C, Koh A, Simmons TJ, Mousa SA, Linhardt RJ. Surface modification of a polyethylene film for anticoagulant and anti-microbial catheter. *Reactive and Functional Polymers* 2016;100:142-150.

BOOK CHAPTERS

Shaker A. Mousa

Bowen N, Mousa SA. "Role of antiplatelet therapy in neurosurgery: Efficacy and safety profiles" in *Anticoagulation and hemostasis in neurosurgery*. Loftus CM,

ed. Switzerland: Springer; 2016:65-89.

El-Fawal HA, Rembisz R, Alobaidi R, Mousa SA. "Chemotherapy-mediated pain and peripheral neuropathy: Impact of oxidative stress and inflammation" in *Oxidative stress and antioxidant protection: The science of free radical biology and disease*. Armstrong D, Stratton RD, eds. Hoboken, NJ: John Wiley & Sons, Inc. 2016:367-388.

Rajabi M, Srinivasan M, Mousa SA. "Nanobiomaterials in drug delivery" in *Nanobiomaterials in drug delivery*. Grumezescu, A, ed. William Andrew Publishing; 2016:1-37.

Srinivasan M, Rajabi M, Mousa SA. "Nanobiomaterials in cancer therapy" in *Nanobiomaterials in cancer therapy*. Grumezescu, A, ed.: William Andrew Publishing; 2016:57-89.

Shaker A. Mousa
and Paul J. Davis
Mousa SA, Davis, PJ. "Angiogenesis and anti-angiogenesis strategies in cancer" in *Anti-angiogenesis Strategies in Cancer Therapies*. Mousa SA, Davis PJ, eds. Elsevier, London: Academic Press; 2016:1-19.

Mousa SA, Yalcin M, Davis PJ. "Models for assessing anti-angiogenesis agents: Appraisal of current techniques" in *Anti-angiogenesis Strategies in Cancer Therapies*. Mousa SA, Davis PJ, eds. Elsevier, London: Academic Press; 2016:21-38.

Mousa SA, Muralidharan-Chari V, Davis PJ. "Interface between thrombosis-inflammation and angiogenesis" in *Anti-angiogenesis Strategies in Cancer Therapies*. Mousa SA, Davis PJ, eds. Elsevier, London: Academic Press; 2016:51-68.

Davis PJ, Leinung M, Mousa, SA. "MicroRNAs and angiogenesis" in *Anti-angiogenesis Strategies in Cancer Therapies*. Mousa SA, Davis PJ, eds. Elsevier, London: Academic Press; 2016:69-84.

Mousa SA, Abutaleb M, Davis PJ. "Naturally occurring anti-angiogenesis agents" in *Anti-angiogenesis Strategies in Cancer Therapies*. Mousa SA, Davis PJ, eds. Elsevier, London: Academic Press; 2016:85-97.

Mousa SA, Darwish NHE, Davis PJ. "Integrin antagonists and angiogenesis" in *Anti-angiogenesis Strategies in Cancer Therapies*. Mousa SA, Davis PJ, eds. Elsevier, London: Academic Press; 2016:99-123.

Davis PJ, Mousa SA. "Tyrosine kinase inhibitors and angiogenesis" in *Anti-angiogenesis Strategies in Cancer Therapies*. Mousa SA, Davis PJ, eds. Elsevier, London: Academic Press; 2016:125-131.

Davis PJ, Mousa SA. "Tetraiodothyroacetic acid at integrin αvβ3: A model of pharmaceutical anti-angiogenesis" in *Anti-angiogenesis Strategies in Cancer Therapies*. Mousa SA, Davis PJ, eds. Elsevier, London: Academic Press; 2016:133-146.

Mousa SA, Sudha T, Davis PJ. "Anti-angiogenesis therapy and its combination with chemotherapy: Impact on primary tumor and its metastasis" in *Anti-angiogenesis Strategies in Cancer Therapies*. Mousa SA, Davis PJ, eds. Elsevier, London: Academic Press; 2016:147-163.

Bharali DJ, Rajabi M, Mousa SA. "Application of nanotechnology to target tumor angiogenesis in cancer therapeutics" in *Anti-angiogenesis Strategies in Cancer Therapies*. Mousa SA, Davis PJ, eds. Elsevier, London: Academic Press; 2016:165-178.

Mousa SA, Davis PJ. "New directions in anti-angiogenesis research" in *Anti-angiogenesis Strategies in Cancer Therapies*. Mousa SA, Davis PJ, eds. Elsevier, London: Academic Press; 2016:179-186.

LECTURES AND KEYNOTES

Shaker A. Mousa
Plenary Lecture and Award of Excellence. 5th Pan Arab Hematology Association Conference. Cairo, Egypt, February 11-13, 2016.

Keynote Speaker. Alternative and Complementary Medicines. King Abdulaziz University, Jeddah, Saudi Arabia, April 4-8, 2016.

Keynote Speaker. 6th Global Experts Meeting & Expo on Nanomaterials and Nanotechnology Congress and Expo. Dubai, United Arab Emirates, April 21-23, 2016.

Keynote Speaker. World Congress & Expo on Pharmaceutics & Drug Delivery Systems. Dubai, UAE, April 21-23, 2016.

Chair of Session on VTE in Cancer/Surgery. 24th International Congress on Thrombosis. Istanbul, Turkey, May 4-7, 2016.

Keynote speaker. 8th World Medical Nanotechnology Congress. Dallas, TX, June 9-11, 2016.

Keynote speaker. 4th International Drug Design Congress. Istanbul, Turkey, October 13-15, 2016.

Keynote Speaker. Special Session on Heparin Diversifications. Loyola University, Chicago, IL, October 28, 2016.

Keynote Speaker. Immigrant Egyptian Oncology Forum, Luxor, Egypt, December 14-16, 2016.

HONORS AND APPOINTMENTS

Shaker A. Mousa
Appointed Editor-In-Chief of *Biomedicines Journal*

Appointed to Editorial Board of *Nanomedicine and International Nanomedicine*.

Appointed to NIH Study Section for Center for Scientific Review Special Emphasis Panel - ZRG1 F10A-S (20); Fellowships: Physiology and Pathobiology of Cardiovascular and Respiratory Systems, March 10-11, 2016.

Appointed to NIH Study Section for Center for Scientific Review Special Emphasis Panel - ZRG1 CVRS-H (11 II); November 3-4, 2016.

Appointed to NIH Study Section for Respiratory Sciences Small Business - Respiratory Sciences Small Business Activities SEP [ZRG1 CVRS-H 11 B]; November 17-18, 2016.

GRANTS

Shaker A. Mousa
Project: Tumor targeted irradiation in mice
Grantor: NanoPharmaceuticals LLC
Total award: $30,720
Period of Performance: 4/1/16 - 6/30/16

Project: Scale up N-DAT for Biological evaluation
Grantor: NanoPharmaceuticals LLC
Total award: $78,080
Period of Performance: 4/1/16 - 6/30/16

Project: Amendment to Label the final Nano-diaminotetrac formulation
Grantor: NanoPharma-

ceuticals LLC
Total award: $74,240
Period of Performance:
5/1/16 - 10/31/16

Project: NDAT Process Chemistry and Novel Derivatives
Grantor: NanoPharmaceuticals LLC
Total award: $40,960
Period of Performance:
4/1/16 - 6/30/16

Project: NADT Backups Chemistry P-DAT
Grantor: NanoPharmaceuticals LLC
Total award: $61,440
Period of Performance:
4/1/16 - 6/30/16

Project: Radiosensitization of Pancreatic Cancer
Grantor: NanoPharmaceuticals LLC
Total award: $122,880
Period of Performance:
7/28/16 - 10/31/16

Project: Optimization of Lead clinical Candidate and its anti-cancer efficacy versus Nano-DAT Identification of Lead clinical Candidate(s) Polymer; Characterization of Lead Clinical Candidate(s) in Crossing the Blood Brain Barrier; Anti-Cancer Efficacy of Lead clinical Candidate(s) Polymer; and Anti-Cancer Efficacy of Lead clinical Candidate(s) Polymer conjugated Non-Nano DAT or TAT derivatives
Grantor: NanoPharmaceuticals LLC
Total award: $122,880
Period of Performance:
7/28/16 - 6/30/17

Project: Scale up of C-TAT and P-bi-TAT for Safety Assessment in Male and Female Mice after Daily Exposure at Different Doses for 14 Days
Grantor: NanoPharmaceuticals LLC
Total award: $89,872
Period of Performance:
09/19/16 - 3/31/17

Project: Analytical Method Development and Pharmacokinetic Studies in Rodents
Grantor: NanoPharmaceuticals LLC
Total award: $75,239
Period of Performance:
09/26/16 - 6/30/17

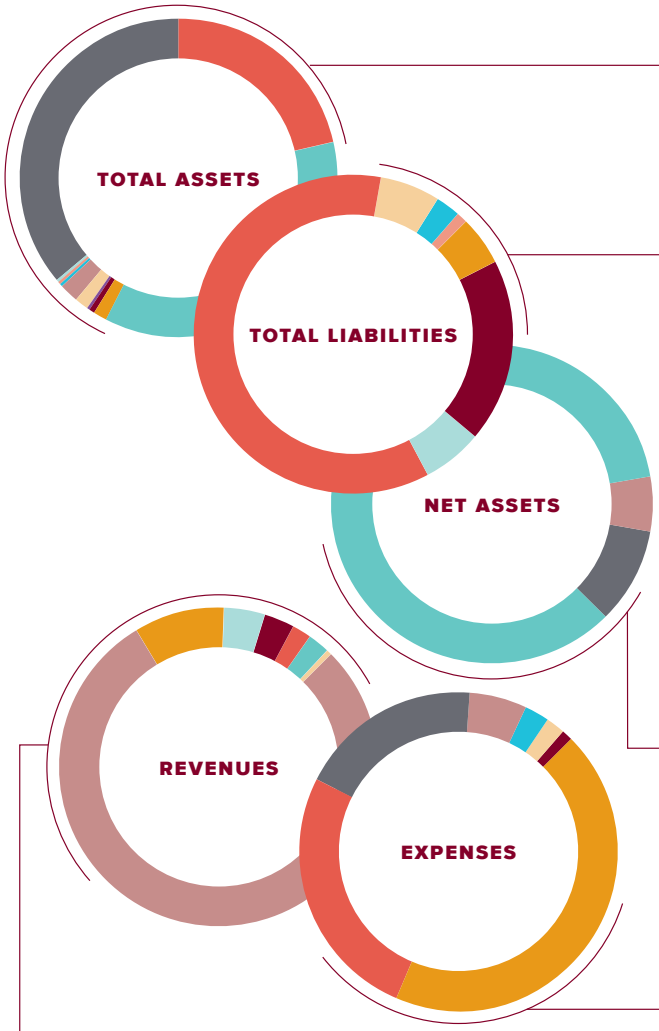
Project: Synthesis and Scale up /Test C-TAT against Neuroblastoma/ Antiangiogenic study of C-TAT and P-bi-TAT vs N-DAT and N-TAT
Grantor: NanoPharmaceuticals LLC
Total award: $112,640
Period of Performance:
11/28/16 - 6/30/17

Project: A: Synthesis and scale up of β-C-TAT and Oral PK of β-C-TAT (IV/ Oral PK), B: Test C-TAT (gamma-C-TAT, Subcutaneous and β-C-TAT, Oral)
Grantor: NanoPharmaceuticals LLC
Total award: $112,641
Period of Performance:
11/28/16-4/30/17

Project: Service Agreement for additional work on Amendment of Synthesis of 10 grams L-T3 nanoformulations (PLGA-T3 NPs) – Develop L-T3-PLGA NPs coated with Chitosan, 2- Optimize the Loading for L-T3/ NPs from 2% to 4%
Grantor: Pro-Al Medico (AGTT)
Total award: $66,000
Period of Performance:
11/1/16 – 01/30/17

FINANCIAL REPORT

JULY 1, 2015 – JUNE 30, 2016



STATEMENT OF FINANCIAL POSITION

ASSETS

Cash and cash equivalents	$27,413,499
Investments	45,689,914
Other assets	1,562,094
Accounts receivable - Students, net	633,461
Receivables - Government entities, net	444,200
Pledges receivable	1,785,086
Student loan receivable	2,484,854
Other receivables	400,824
Assets held in charitable remainder annuity trust	154,463
Agency funds	348,174
Property, plant & equipment, net	45,621,641
TOTAL ASSETS	**$126,538,210**

LIABILITIES

Accounts payable and accrued liabilities	$2,013,735
Deferred income and deposits	7,203,328
U.S. government grants refundable	2,367,539
Bonds payable	23,456,428
Expected post retirement benefit obligation	2,339,552
Other liabilities	1,042,397
Deposits held in custody for others	348,174
TOTAL LIABILITIES	**$38,771,153**

NET ASSETS

Unrestricted net assets	$74,439,659
Temporarily restricted net assets	$4,939,168
Permanently restricted net assets	$8,388,230
TOTAL NET ASSETS	**$87,767,057**
TOTAL LIABILITIES AND NET ASSETS	**$126,538,210**

STATEMENT OF ACTIVITIES

REVENUES

Student tuition and fees, net of financial aid	78.92%
Auxiliary enterprises	9.33%
Government contracts and grants	4.16%
Gifts and pledges	2.91%
Investment income	2.04%
Other sources	2.26%
Postgraduate education	0.38%
TOTAL	**100%**

EXPENSES

Instruction/Student services	44.15%
Physical plant	25.97%
General administration	18.56%
Research	5.78%
Institutional advancement	2.63%
Student financial aid	2.05%
Postgraduate education	0.86%
TOTAL	**100%**

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EDITOR
Gil Chorbajian

PHOTOGRAPHY
Kris Qua

DESIGN
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