A Message from the University at Albany President

It is with great pleasure that I present to you the University at Albany’s 2017 Research Report. Having recently taken office as UAlbany’s 20th president, I am looking forward to working closely with the Division for Research and our faculty to build on the University’s extraordinary assets across our research enterprise.

Discovery is key to fulfilling UAlbany’s mission, and to our success as a comprehensive public research university. That is why our strategic vision includes a commitment to expanding our research capacity, while leveraging our many significant achievements.

As we enhance our research, scholarship and creative work, it is fitting that this year’s report focuses on the health sciences. These fields have long occupied a central position in the University at Albany’s research landscape, a position that has grown over the past year with new investments, expanded academic offerings and the naming of our Health Sciences Campus. We have secured prestigious federal grants, hired new world-class faculty members and researchers, and continued our School of Public Health’s decades-long relationship with the New York State Department of Health — the only such partnership in the nation.

The health sciences also play a critical role in our public engagement portfolio, and our nationally leading work in addressing minority health disparities is a prime example of UAlbany’s impact. Last year, our accomplishments in this area were recognized with a highly competitive National Institutes of Health endowment that will help recruit and train a new generation of researchers. As part of UAlbany’s highly collaborative and interdisciplinary research environment, these researchers will be positioned to address our society’s persistent inequities in health outcomes.

The stories and people showcased in these pages present a rich tapestry of innovation and discovery, and truly demonstrate UAlbany’s extensive reach through the health sciences and biomedical research. I am confident that you will share my view that this diverse array of projects represents tremendous promise for the future of our communities and our world.
A Message from the Vice President for Research

By featuring our faculty’s pioneering work addressing society’s most pressing public health challenges, the University at Albany 2017 Research Report captures the breadth of health sciences research and scholarship across our three campuses.

With an arsenal of intellectual and scholarly assets spanning the health sciences, the University’s faculty scholars and researchers are uniquely positioned to “turn scientific discoveries into better health” — a cornerstone of the National Institutes of Health’s (NIH) strategic plan through 2020.

Underscoring our commitment to the study of public health and disease, UAlbany has unveiled a new vision for its East Greenbush biotechnology campus, now known as the Health Sciences Campus. This new health sciences vision bridges our entire University enterprise and reflects a renewed focus on our expertise in public health, biomedical science, population health, environmental health science, behavioral health, health policy, mental health, epidemiology, social welfare, health economics and the social determinants of health.

Building upon our more than 30-year partnership with the New York State Department of Health, UAlbany’s investigator-led research and team science is gaining national recognition, particularly in the area of public health intervention research.

This publication also features a landmark $10 million NIH health disparities endowment award to strengthen community-based health disparities research, discovery and training. The award reflects the kind of innovation and discovery occurring across our campuses: faculty leveraging their research and scholarly expertise to enhance healthy living, extend life and reduce the burden of disease, while translating their achievements into entrepreneurial and economic development opportunities.

The 2017 Research Report highlights some of our exemplary projects, offering a glimpse at the many ways UAlbany’s research is improving the health and well-being of individuals across New York and beyond.
More than three decades after the world first learned of HIV, the virus that leads to AIDS remains a global pandemic, with the world's poorest nations hardest hit. Even in the U.S., the Centers for Disease Control and Prevention estimate that more than 1 million persons are living with HIV infection.

The University at Albany researchers noted here have dedicated themselves to tackling the scourge of HIV/AIDS through their particular fields of study and by interdisciplinary collaboration.

Interim Provost Dr. Darrell Wheeler, who serves as the vice chair of the Presidential Advisory Council on HIV/AIDS, has been working to reach historically marginalized populations that suffer from the disease at much higher rates than others.

As new drugs and drug combinations have proved to increase longevity among people with HIV and AIDS, Wheeler’s engagement work, supported by the National Institutes of Health’s National Center for HIV, Viral Hepatitis, STDS and Tb Prevention, has proved a success by engaging high-risk groups in HIV treatment and prevention programs, including accepting and using pre-exposure prophylaxis (PrEP) to avoid becoming infected.

Dr. Erika Martin, associate professor of public administration and policy, is working closely with the New York State Department of Health to combat HIV infections in New York. Launched by Gov. Andrew M. Cuomo in 2014, the “Ending the Epidemic” (ETE) plan aims to reduce the annual number of new HIV infections to just 750 (from an estimated 3,000) by 2020 and achieve the first-ever decrease in HIV prevalence in New York State.

Martin, who also serves as director of health policy studies at the Rockefeller Institute of Government, is engaged in a simulation model to project what the future holds if past epidemic trends continue, how different ETE strategies will influence future trends and what it will take to meet the goal of 750 new infections per year.

Dr. Eli Rosenberg, an associate professor of epidemiology and biostatistics, focuses on methods and analyses for understanding pertinent epidemiological issues in HIV prevention. Among these are an NIH National Institute on Drug Abuse study of racial disparities in HIV infection among men who have sex with men (MSM), and how factors such as sexual networks, HIV care, sexually transmitted infections and substance use shape transmission.

Beyond HIV, Rosenberg investigates the epidemiology of a variety of infections of public health significance, including hepatitis C and Zika virus. By accurately tracing the path of a disease and improving the tools used in research and practice, Rosenberg sees enhanced results for both public health data are collected and utilized. In particular, he is developing and applying new methods for disease surveillance and statistical and network modeling, and creating software to support research studies focused on disease transmission.

Dr. Frank Dillon, associate professor of counseling psychology, is working to improve participation among Latino men in HIV testing initiatives. Dillon has partnered with the Alliance for Positive Health—a community-based organization in Albany dedicated to improving lives impacted by HIV/AIDS. His project aims to understand the factors that disproportionately prevent Latino gay, bisexual and other MSM from participating in testing or otherwise being aware of their HIV status.

As part of the project, Dillon also is providing opportunities for students to take part in the research. Through continued on page 28
A s America grows and becomes increasingly diverse, minority groups are experiencing an increasingly disproportionate burden of preventable disease, disability and death, compared to whites. Looking at culture, technological advances, the physical and mental ramifications of disparities as well as avenues toward their elimination, University at Albany researchers have formed a corps of investigators dedicated to solving this crisis.

As America grows and becomes increasingly diverse, minority groups are experiencing an increasingly disproportionate burden of preventable disease, disability and death, compared to whites. Looking at culture, technological advances, the physical and mental ramifications of disparities as well as avenues toward their elimination, University at Albany researchers have formed a corps of investigators dedicated to solving this crisis.

Dr. Lawrence Schell, director of the Center for the Elimination of Minority Health Disparities and professor of anthropology and epidemiology and biostatistics, has for decades conducted research on environmental factors that plague the health of minority populations. His efforts have been supported by significant grants from the National Institutes of Health’s (NIH) National Center on Minority Health and Health Disparities, the National Institute of Environmental Health Sciences and other agencies.

Looking at the interrelationship between biology and culture, Schell examines how populations respond to contemporary urban environments, especially minority populations disproportionally beset by pollution. He has conducted a long-term study of the impact of PCBs on the health and development of women and their children within the Akwesasne Mohawk Nation. He also has studied how noise, as a type of urban stress, affects human development, both prenatal and post-natal.

Dr. Feng (Johnson) Qian, assistant professor of health policy, management and behavior, focuses on quality of care and patient safety issues. Understanding how advances in technology may provide a key healthcare resource, Qian is examining how medical technology and digital health can be used to reduce barriers and combat minority health disparities. His work explores patient-centered outcomes, health disparities and practice variation, and global health.

Qian has also devoted time to groups that have been overlooked by the medical community, such as Asian-Americans. Few studies have examined heart health within the Asian-American community, although this population has become the fast growing racial group in the U.S., at an annual rate of 2.9 percent. His research earned a 2015 “Best Published Paper Award” this September from the Asian & Pacific Islander Caucus.

Qian believes that health research disparities among ethnic groups creates barriers. “We need to dig deeper and find out more about each subgroup to help in diagnosis, disease education, health promotion and treatment,” he said.

Psychologist Christine Wagner’s research examines the effects of the maternal/fetal interaction on neural development. In a recent National Science Foundation-supported study, Dr. Wagner found that exposure to a synthetic progestin (17 alpha-hydroxyprogesterone caproate/17-OHPC) could impair brain function later in life. The drug is often prescribed to pregnant women who are at-risk for preterm birth.

“There is little information regarding the potential effects of 17-OHPC on the developing brain, and yet the drug is prescribed during the late-second and third trimesters and can be detected in maternal and fetal plasma long after injection,” said Wagner.

If a mother is prescribed 17-OHPC during pregnancy, developing infants may be exposed to the hormone during critical periods of cortical development. Because racial disparities exist in the risk of preterm birth, a disproportionate number of exposed infants may arise from specific minority populations.

With specific attention to the health disparities that exist for minority mothers, Dr. Erin Bell, associate...
What causes people to engage in risky behaviors, and why do some seem to be able to self-regulate against what amounts to self-abuse?

University at Albany researchers probe the answers to these questions because the biological and psychological factors that create such behaviors likely hold the key to ameliorating or even expunging them from individuals.

Dr. Edelgard Wulfert, dean of the College of Arts and Sciences and a professor of psychology who continues career-long research into the role of cognitive distortions, stress, physiological arousal and cue reactivity in addictive behaviors, is using her Addictive Behaviors Lab to focus on deficits in self-regulation, particularly in the area of pathological gambling.

By focusing predominantly on gambling disorder, Wulfert and her graduate student research team are able to study addictive behavior in its "purest" form, i.e., without the confounding physiological effects of substances. Their basic experimental research is focused on the elucidation of factors that determine the relationship between stress and impulsive decision-making and the role of physiological arousal experienced as urges and cravings to engage in the addictive behavior.

Findings from Wulfert’s research, supported by the National Institute on Drug Abuse (NIDA), have led to the development of an innovative treatment for gambling disorder termed Cognitive-Motivational Behavior Therapy. “Our goal is to improve our conceptual understanding of addiction, including its treatment, the maintenance of treatment gains, and the relapse process,” Wulfert said.

Dr. Gabriel Schlomer, assistant professor of educational psychology and methodology, who targets adolescent substance misuse, which places many adolescents at substantial risk for psychological and social adversity.

Schlomer’s work on the NIDA-funded gPROSPER Project centers on gene-environment interplay with a focus on gene-by-environment interactions using measured genes. His current research involves testing genetic and environmental influences on adolescent substance misuse using data that includes 2,000 adolescents who participated in a substance misuse intervention and provided DNA.

“I look at genes linked to substance use and delinquency risk and determine if the intervention — an environment — can mitigate that risk,” he said. “In many cases the answer to that question is ‘yes,’ which is continued on page 28.

The three faculty members exploring behavioral health who are spotlighted here have drawn $399,000 in research funding over the past five years.
Invasions

Stemming Deadly Invasions

A number of infectious diseases are infecting devastation upon millions around the world. But the scientists of the Wadsworth Center of the New York State Department of Health, holding joint appointments in the University at Albany’s School of Public Health (SPH), are opening doors to discovering causes and cures for a host of bacterial illnesses, and finding ways to track such scourges as the Zika virus.

Today, Professor Jan E. Conn, an SPH biomedical scientist, researches vector biology and population genetics at Wadsworth. With support from the National Institute of Allergy and Infectious Diseases (NIAID) of the National Institutes of Health, Dr. Conn and her laboratory are attempting to hasten the end of world-wide malaria by focusing on the evolutionary genetics, ecology and behavior of several species of Neotropical (Southern USA, Central America, South America) malaria vectors, or mosquitoes.

Collaborating with Brazilian, Colombian, Panamanian and Peruvian researchers using mitochondrial and nuclear genes, microsatellite markers and single nucleotide polymorphisms (SNPs), Conn’s laboratory compares genetics and evolution of mitochondrial genomes of several mosquito species and analyzes ecological and environmental aspects of larval breeding sites. The lab uses these data to construct habitat distribution and other models and test mosquito behaviors, including the effects of deforestation on mosquito biting rates in different habitats in Peru.

SPH biomedical sciences Professor Laura D. Kramer directs the Wadsworth Center’s Arbovirus Laboratories, where research focuses on viruses transmitted by arthropods — invertebrate animals with external skeletons and segmented bodies such as mosquitoes, ticks and sandflies that cause medically important diseases such as encephalitis, dengue, Zika and yellow fever, to name a few. The lab’s research explores the complexity of the interaction between the virus, the arthropod vector and the vertebrate host, and how this interaction impacts the intensity of virus transmission, viral evolution and perpetuation of the pathogen.

Dr. Kramer’s NIAID-funded research program currently centers on emerging vector-borne viruses, particularly Zika, chikungunya, dengue and West Nile, as well as the tick-borne virus Powassan. She conducts both field and experimental studies that explore the ecology and molecular epidemiology of these viruses over time and space to elucidate the risk they pose to human health. Other projects focus on the impact of biotic (e.g., genetics) and abiotic (e.g., temperature) factors on vectorial capacity of the mosquito for these viruses.

Research is also underway to explain the mechanisms by which arboviruses survive adverse seasons in temperate environments, specifically the Eastern Equine Encephalitis virus in the northeastern U.S. The long-term goal is to understand factors that constrain or enhance viral evolution and adaptation to arthropod and vertebrate hosts.

As deputy director of the Wadsworth’s Division of Infectious Disease and a member of SPH’s biomedical sciences faculty, Professor Kathleen McDonough studies how bacterial pathogens regulate their gene expression to adapt to conditions they encounter during infection.

Dr. McDonough’s research team is primarily concerned with two of the world’s most well-known and frightening pathogens: Mycobacterium tuberculosis, the bacterium that causes TB, and Yersinia pestis, the causal agent of bubonic and pneumonic plague. In a series of NIAID-funded studies, her lab has employed a variety of techniques with both pathogens, from molecular genetics and biochemistry to bioinformatics, proteomics and fluorescence microscopy.

A long-term objective of the lab’s work is to better understand how the tuberculosis bacterium recognizes and responds to different host environments as it causes infection, and help devise effective strategies to prevent tuberculosis infection and disease. Similarly, the goal of the Yersinia program is to characterize the gene regulatory responses that allow Yersinia pestis to cycle between its flea vectors and mammalian hosts during plague transmission.
A person who lives in a violent neighborhood has a higher chance of injury than someone who lives in a safer area. A lack of healthy food will see higher rates of obesity and type 2 diabetes. More children develop asthma in homes where air pollution and environmental hazards exist. Children do not get adequate exercise in communities without parks or safe streets.

These are among the social determinants of health, and University at Albany researchers are tackling the issues from all sides — food security, climate implications, gun violence — to seek solutions that will not only improve individual and population health, but advance health equity in society. Dr. Shao Lin, professor and associate director of Global Health Research at the School of Public Health (SPH), supported by the Environmental Protection Agency, studies environmental impacts on health outcomes, from pollution-related chronic diseases (e.g., respiratory and cardiovascular) to environmental change and extreme weather impacts on mental health, vector-borne diseases and reproductive outcomes within a community.

Through a U.S. Centers of Disease Control and Prevention grant, she examined the health impacts of the 9/11 attacks and Hurricane Sandy on New York City residents, as well as how air pollution, traffic exposure and proximity to industrial facilities affect a community’s health. She has identified significant disparities and social vulnerabilities to different environmental problems and disasters. While air pollution has stronger impacts on poor and minority communities, those with higher incomes have been more susceptible to natural disasters, such as Hurricane Sandy and widespread power outages.

Dr. Janine Jurkowski, an associate dean for public health and associate professor of health policy, management and behavior at SPH, is working on a childhood obesity intervention that incorporates participatory research approaches. Along with a colleague at Harvard University, Jurkowski will work with families from diverse backgrounds living in poverty in the greater Boston area.

The new study, funded by the National Institutes of Health, is based on one the team conducted at Head Start centers in Albany. Involving parents in intervention design increased the ability to address social determinants of health, and ultimately resulted in a reduction in body mass index, a measure of obesity, among children.

The larger Boston study also will look at the effectiveness of the parent-empowerment model. It begins in September and runs for five years. For Distinguished Professor Alan Lizotte, an American Society of Criminology fellow and former dean of the School of Criminal Justice (SCJ), studying a population over time is nothing new. Dr. Lizotte has been a co-principal investigator on the Rochester Youth Development Study, a 30-year investigation into the causes and consequences of delinquency and drug use on urban adolescents.

The Rochester study started in 1986 with 1,000 seventh and eighth graders. Through in-person interviews at least once a year for 30 years, researchers have collected a valuable trove of information on crime, violence, drug use and incarceration, and how antisocial behaviors affect future generations. (The original study group has lost 10 subjects to homicide, with a similar number convicted of killing others.)

Study data can be mined for information useful for protecting communities from health risks. For example, the data show that younger teens are more likely to carry — and use — illegal guns than older teens, and that a single gun is typically shared among

continued on page 28
Accordingly, five scholars were chosen in October 2016 for Presidential Doctoral Fellowships, with ten more Ph.D. candidates enrolling over the next five years. Making up the maiden quintet was Yajaira Cabrera-Tineo of counseling psychology, Melissa Noel of criminal justice, Kaydian Reid of public health policy, Wayne Lawrence of epidemiology and biostatistics, and Erica Tyler of anthropology.

Two new doctoral fellows have been named for fall 2017: Hnin Wai Lwin of Myanmar, a medical doctor and public health specialist who aspires to become an infectious disease epidemiologist, and Katheryn Roberson, most recently a mental health therapist in an outpatient center located in the South Bronx.

Cabrera, initially attracted by the quality of UAlbany’s counseling psychology program, is eager to take advantage of the fellowship’s many facets. “The extra support the fellowship provides will allow me not just to acquire greater insight into the current status of health disparities but also to work with and learn from the leading researchers in the field,” said Cabrera. “This will inform all aspects of my work.”

Noel received her master’s in criminal justice at UAlbany and is now in her third year of Ph.D. study. “At the time of enrolling at UAlbany I was not aware of my research interest in health disparities,” she said. “Now, both the CEMHD and the endowment grant will play an essential role in my examining the collateral consequences of incarceration on the quality of life for formerly incarcerated parents and their children.”

Tyler, who is in her second year of the Ph.D. program, is eager to take advantage of the fellowship’s support as she embarks on a career examining the collateral consequences of incarceration on the quality of life for formerly incarcerated parents and their children.

The National Institutes of Health (NIH) awarded a prestigious $10 million grant establishing the UAlbany Endowment for Community-Based Health Disparities Research and Training. For 13 years, UAlbany’s Center for the Elimination of Minority Health Disparities (CEMHD) has accumulated a portfolio of multidisciplinary research focused on investigating the sources of disparities, both locally and nationally, through partnerships with communities, healthcare providers, and state and county departments of health.

The Leader in Erasing Health Disparities

April of 2016 marked a milestone for the University’s national leadership in research aimed at eliminating health disparities among minorities and underserved populations: the National Institutes of Health (NIH) awarded a prestigious $10 million grant establishing the UAlbany Endowment for Community-Based Health Disparities Research and Training.

The University wasted no time in attending to one of the endowment’s cornerstones: choosing seven Presidential Doctoral Fellows for Research Training in Health Disparities from groups underrepresented in graduate school. The National Science Foundation and several independent studies have determined that one of America’s greatest public health challenges is the lack of scientists and researchers from diverse backgrounds. As emphasized in the NIH’s “Health Disparities Strategic Plan,” increasing the pipeline of researchers from racial and ethnic minority populations will improve the nation’s capacity to close this gap.


The University at Albany, a pacesetter in multidisciplinary research aimed at eliminating health disparities among minorities, had its standing confirmed in April 2016 when the National Institutes of Health (NIH) awarded it a $10 million prize to establish the UAlbany Endowment for Community-Based Health Disparities Research and Training. The University wasted no time in attending to one of the endowment’s cornerstones: choosing seven Presidential Doctoral Fellows for Research Training in Health Disparities from groups underrepresented in graduate school. The National Science Foundation and several independent studies have determined that one of America’s greatest public health challenges is the lack of scientists and researchers from diverse backgrounds. As emphasized in the NIH’s “Health Disparities Strategic Plan,” increasing the pipeline of researchers from racial and ethnic minority populations will improve the nation’s capacity to close this gap.

The University at Albany, a pacesetter in multidisciplinary research aimed at eliminating health disparities among minorities, had its standing confirmed in April 2016 when the National Institutes of Health (NIH) awarded it a $10 million prize to establish the UAlbany Endowment for Community-Based Health Disparities Research and Training. The University wasted no time in attending to one of the endowment’s cornerstones: choosing seven Presidential Doctoral Fellows for Research Training in Health Disparities from groups underrepresented in graduate school. The National Science Foundation and several independent studies have determined that one of America’s greatest public health challenges is the lack of scientists and researchers from diverse backgrounds. As emphasized in the NIH’s “Health Disparities Strategic Plan,” increasing the pipeline of researchers from racial and ethnic minority populations will improve the nation’s capacity to close this gap.
Getting Healthcare Healthy

“Complex” is how University at Albany Assistant Professor Ashley Fox characterizes many of the challenges facing policymakers regarding the effects of health policies on health outcomes. “It’s hard to actually identify the policies that matter — sometimes, policy matters in a circuitous way,” she said.

Such policies are needed, however. A 2014 survey of the healthcare systems of 11 developed countries by the Commonwealth Fund found the U.S. system to be the most expensive and worst-performing in terms of health access, efficiency and equity.

Dr. Fox, a faculty member in the Department of Public Administration and Policy, and Associate Professor Kathleen Strully in the Department of Sociology are among UAlbany researchers seeking to analyze and remove stumbling blocks that inhibit the path of U.S. policymakers toward effective healthcare legislation.

Fox’s research focuses on the broader social policies that have indirect effects on health. This has brought her to an examination of global HIV/AIDS politics, policy and epidemiology so as to better specify the role of what is often described as “political commitment” in explaining differences in countries’ policy responses to the disease.

She also examines “theoretical interests”: how factors such as public opinion, party ideology and evidence (if any) affect policymakers and also citizen response. She points to New York City’s proposed “soda ban” that would have limited the size of sugar-sweetened beverages allowed to be sold in the city. The ban was blocked in the courts, but the city saw a decrease in the consumption of sugary beverages and an improvement in child obesity rates — suggesting that the widespread debate over the proposal may have been a catalyst itself for positive health outcomes.

Currently, Fox is at work on a project funded by a Robert Wood Johnson Public Health Law grant that examines how state-by-state differences in social policies affect income inequality within a state, and infant and child health outcomes across states. She notes that southern states, for instance, tend to have worse health outcomes compared to northern states.

“There’s a red state-blue state divide but we really don’t know to what extent this is because of differences in demographics versus policy differences,” she said. “And, of course, if the variations are due to policy differences, ultimately politics drive policy.”

Dr. Strully, associate professor of sociology, researches several areas of American healthcare involving medical sociology and population health, and the connections between health and poverty, and health and unemployment.

Her research brings her to the heart of current political and policy debates. She and her research team are working on finalizing their analysis of how restrictive immigration policies (such as E-Verify policies and broader omnibus bills targeting undocumented immigrants) have impacted maternal and infant health, using birth certificate data between 2007 and 2014.

“We are also currently working on preparing data for an additional analysis looking at restrictive immigration policies and child and adult health using data from the National Health Interview Survey,” she said.

Another area of her focus is social contexts, sexual networks and disparities in sexually transmitted diseases (STDs), where she and her collaborators, through support from the National Institute’s of Health’s National Institute for Child Health and Human Development, have built an agent-based simulation model using estimates from the National Longitudinal Study of Adolescent and Adult Health.

Simulating sexual networks among 19 to 25 year olds, the model will be employed to test how disproportionate incarceration of African-American males contributes to race disparities in sexually transmitted disease. “Because of racial residential segregation and the fact that the burden of incarceration is so unequal by race, traditional statistical techniques are not very useful when addressing this question,” she said.

She posits that her empirically informed simulation approach can shed light on an important driver of race differences in the contraction of HIV and other STDs.

The current work of these two researchers studying barriers to health services has garnered $0.84 million in public and private grant support.
Cost, quality and access. Those three components are known as the “iron triangle” of healthcare delivery. Most industry experts argue that at any time, you can improve one or perhaps even two of them, but it usually comes at the expense of the third. In the U.S., the debate over which of the components to focus upon is ongoing.

At the University at Albany, Dr. Diane Dewar, a health economist and associate professor of health policy, management and behavior in the School of Public Health, is taking the lead on researching how the “iron triangle” is being delivered in New York State and throughout the country — specifically to vulnerable populations. Dewar is founder and director of the University’s Institute for Health System Evaluation (IHSE). Created two years ago, IHSE is a hub for research and evaluation of U.S. health systems in partnership with colleges and universities, regional businesses and industry leaders across the globe.

More than 30 researchers from UAlbany, Boston University and the University of Maryland have joined Dewar on IHSE’s research and evaluations. Joining Dewar from UAlbany are Professor Kajal Lahiri, a renowned economist who is also on the faculty of health policy, management and behavior, and Rose Greene, director of the Center for Human Services Research (CHSR).

“Our institute focuses on two of the issues that matter most to Americans: public health and the improvement of the healthcare system, the largest sector of the U.S. economy,” Dewar said. “We want to know where the country’s investment in healthcare is going. What’s the trade-off between efficiency and equity in the system?”

Since its creation, IHSE has received continuous grant support from the New York State Department of Health (NYSDOH). Additional support from SUNY has resulted in summer short courses that provide certification opportunities for professionals in health analytics.

Some of IHSE’s largest current projects include:

**Evaluation of the Delivery System Reform Incentive Payment (DSRIP) of Medicaid in New York State:**

The objective of this five-year independent evaluation of DSRIP, led by a time series analysis team from Dr. Lahiri’s Econometric Research Institute, is to evaluate the impact on population health, healthcare quality and efficiency, and how well the implementation of this reform has gone.

**Evaluation of the impact on Medicaid utilization and costs of supportive housing for the homeless in New York State:**

This three-year independent evaluation is split between IHSE and CHSR, led by Greene. The goals are to evaluate the Medicaid service costs and utilization relative to the investment in supportive housing, and to determine how well-targeted the intervention is for the homeless population in New York State.

**Evaluation of Partnerships to Promote Dental Health in New York State:**

This 18-month project is looking at the impact of both state and community partnerships in promoting dental health to the state’s residents through the NYSDOH Bureau of Dental Health. It investigates the roles, functioning and sustainability of the partnerships in attaining their goals in improving dental health.

Though the majority of the projects are still in progress and new projects will soon be underway, Dewar has strong expectations for the IHSE evaluations at both the state and federal levels.

Projects by faculty members in the Institute for Health System Evaluation have a current support level of $4.6 million.

“We are hoping to see some real changes to the delivery and culture of healthcare through our findings,” Dewar said. “There’s a lot of smart minds working together here who bring different perspectives to the table. It’s like a mosaic. We are thinking about healthcare reform and evaluation from many different angles to create a complete picture of how well the healthcare system components work.”
Advancing and often coordinating different perspectives on mental health, University at Albany researchers in social welfare, public health and psychology are evolving our understanding of treatments in areas that previously received scant attention.

Dr. Julia Hastings, assistant professor in both public health and social welfare, is an associate in the Center for the Elimination of Minority Health Disparities (CEMHD). Her projects, which have included directing research on diabetes and depression service use among African-Americans, focus on the relationships among race, mental health outcomes, health conditions, risk and protective factors and poverty.

"Studying the complexities of dual health conditions represents an area for new knowledge development," she said. "The healthcare system was developed to handle mental health and physical health conditions as separate concerns among individuals. Given the advancements in medical technology, it is becoming more feasible to think about how to understand integrated healthcare, especially among low-income vulnerable populations."

Hastings believes that professionals in both fields need more information on how to communicate and treat vulnerable populations with respect and to understand that illness comprises multiple aspects. "We live in complex, intersecting communities where we need to think of persons as whole individuals and not in bits and pieces," she said.

Inducted into the 2017 class of the Society for Social Work and Research Fellows, Hastings recently co-authored with social welfare Associate Professor Lani V. Jones and research colleague Pamela Martin the book, African Americans and Depression: Signs, Awareness, Treatments and Interventions.

Dr. Jones, a scholar-practitioner and nationally sought speaker on black feminist therapy, is, like Hastings, an associate in CEMHD. Her research focuses on the utilization of culturally congruent mental health practice interventions with traditionally underserved populations, aimed at decreasing depressive symptoms and enhancing psychosocial competence or everyday functioning.

Dr. Joanna Workman, assistant professor of psychology, examines depression from the angle of postpartum depression. She notes that motherhood comprises substantial hormonal and experiential changes that reorganize the brain and behavior. Workman is particularly interested in the neural, endocrine and immunological changes that occur during the postpartum period and how these changes are relevant for postpartum depression.

One of her major focuses is on how lactation contributes to postpartum mental health. Many women who forego breastfeeding are at greater risk for depression, but the neuroendocrine mechanisms of this relationship are not well understood. Her lab also focuses on the role of hippocampal (and to a lesser extent, prefrontal cortical) remodeling in stress-related behavioral and endocrine responses after birth.

Dr. Damian Zuloaga, an assistant professor of psychology, studies how disrupting hypothalamic-pituitary-adrenal (HPA) axis function contributes to mood, addiction and cognitive disorders. The HPA axis regulates the release of stress hormones. Alterations in its function have been linked to a wide range of mental health conditions, including depression, anxiety, and substance use disorders.

The work of researchers in mental health profiled here has accrued $1.49 million in grant funding over the past 5 years.
n New York’s Capital Region is increasingly cited as a place that offers tremendous growth opportunities in the health sciences and biomedical industries as it boasts one of the highest concentrations of research and development jobs in the nation.

The University at Albany, the region’s only comprehensive public research university, plays an integral role in this growth equation. It not only offers outstanding academic programs and work force development, she was an ideal choice to help raise the profile of UAlbany’s health sciences portfolio, an integral component of the University’s largest academic expansion in more than 50 years. Her vision? Expand the University’s academic health science programs and build strong partnerships with area health-related organizations and businesses. She began by elevating both the academic programs and the internal and external perceptions of the health sciences at UAlbany. She also pursued paths that would align all of the health sciences strengths across the University and then redesignate UAlbany’s East Campus as a new Health Sciences Campus.

Schweitzer envisioned the Health Sciences Campus as the state-of-the-art epicenter for the emerging regional healthcare industry. Located in Rensselaer, N.Y., the campus is home to the largest concentration of individual health science-related entities in the Capital Region, anchored by the University’s School of Public Health and Cancer Research Center with its Center for Functional Genomics.

She also recognized the importance of strengthening existing partnerships and creating new relationships, stimulating and supporting commercialization of UAlbany intellectual property via the region’s Innovation Hot Spot, which UAlbany spearheads, and enhancing the productivity of faculty researchers through benefits from partnerships made possible by the campus. Schweitzer believes that the campus holds the key assets needed to support regional and New York State industries and generate intellectual property and product development.

In the midst of this aggressive growth strategy, Schweitzer also was appointed to serve as interim dean of the School of Public Health. It was a natural fit for her, as the school continues to serve as an anchor of UAlbany’s efforts to elevate its health sciences programs.

Dr. Darrell Wheeler, UAlbany’s interim provost, lauds Schweitzer for her understanding of the significance of the public health school in its current generation of research, teaching and practice, its future capacity to do even more, and as someone who is well respected for her leadership on a broad array of health-related issues.

Committed to public engagement and the critical role of higher education in the community as a driver of economic development, Schweitzer also serves as chair of the board of the region-wide Council for Economic Growth.

With Schweitzer’s leadership, UAlbany will continue building academic programs, clear pathways and solid advisement services for students pursuing the health sciences, and expand the Health Sciences Campus with organizations that will leverage UAlbany’s health sciences assets and stimulate economic growth. All with the ultimate goal of cultivating new opportunities for entrepreneurs, businesses, faculty and students.

Securing Health Sciences Resources: A Strategy

When physicist Dr. Satyendra Kumar joined the University at Albany a year ago, he brought with him 30 years of experience in cutting-edge research, a proven track record in securing major grants in collaboration with researchers around the globe, and three years of service as a program director at the Division of Materials Research at the National Science Foundation.

It’s that collaborative approach Kumar has been focusing on as the associate vice president for research in the Division for Research. For the past year, he’s been mentoring faculty scientists and researchers on forming partnerships and securing funding for their work.

Universities across the country are beginning to see the need to provide mentoring and advice to faculty on how to most effectively secure extramural grants for research and scholarly activities. Kumar spearheads the effort at UAlbany to build funding opportunities by bringing together faculty across different disciplines, both within and from outside the University. Through faculty research forums, proposal writing workshops for junior faculty, and informal research coffee hours, he has sparked conversations and connections between faculty in different fields.

Currently, Kumar holds forums focusing on topics — e.g., brain science, digital humanities — and invites teams to work together to develop research projects and funding proposals.

“It’s not uncommon to see our people leaving a coffee hour deep in discussion after finding out they are working on similar projects or topics,” Kumar said. “These are researchers who might never have even met, and here they are talking, exchanging information, planning their next meeting.”

Kumar said he finds UAlbany researchers eager to learn new grant application writing skills. “I see the excitement and engagement during the workshops.”

The NSF-CAREER Proposal Writing Workshop that he teaches increased the number of proposals submitted in 2017 by a factor of 5 over the highest number in years prior to his arrival.

Kumar, who spent most of the past 30 years at Kent State University, continues to use a collaborative approach in his own research, which focuses on testing scientific principals using liquid crystals.

He was part of a recent study using ultra-high intensity X-ray beams at the National Synchrotron Light Source-II. A grant from NSF’s US-Ireland Research and Development Partnership program supported Kumar’s team.
Investigations into the health sciences by University at Albany faculty are encouraging and inspiring student researchers to flex their muscles — and by doing so make true contributions to the health sciences.

Young and Contributing

Dr. Mehmet Yigit, an assistant professor of chemistry and affiliated faculty member of The RNA Institute at UAlbany, has developed a new, cost-effective technique that can rapidly detect — and therefore allow quicker treatment of — the Ebola virus and other deadly illnesses.

Yigit’s technique identifies disease biomarkers found in human urine. Then, using gold nanoparticles, his student research team, including UAlbany graduate students Mustafa Balcioglu and Muhit Rana, visually detect within minutes if the associated biomarkers are present, and confirm the detection through absorbance spectroscopy — measuring the amount of light absorbed by the infected sample at a given wavelength.

A paper on the screening technique was published last December in the peer-reviewed journal Advanced Healthcare Materials, with Balcioglu and Rana as lead authors. A paper on the screening technique was published last December in the peer-reviewed journal Advanced Healthcare Materials, with Balcioglu and Rana as lead authors.

UAlbany doctoral student of biomedical sciences Janmeet Saini, together with researchers at the UAlbany Neural Stem Cell Institute, has published breakthrough findings about age-related macular degeneration, the leading cause of blindness in the elderly, in the journal Cell Stem Cell.

Wenhui Feng, Ph.D. student in public policy, has co-authored four scientific papers, including one with Assistant Professor Ashley Fox on the politics, policies and health behaviors involving tobacco (Social Science & Medicine, 2017), and another with Associate Professor Erika Martin on the impact of delivering partner services to reduce transmission and promote linkage to care for various sexually transmitted diseases (Health Services Research, in press).

Among five new studies Feng is working on is one assessing the Supplemental Nutrition Assistance Program effectiveness in getting its low-income participants to eat healthier.

Public Affairs and Policy Ph.D. student Hina Khalid, a lead author on one study and co-author of another on government budgeting and pensions, also co-authored a study on improving screening for Hepatitis C, and is now investigating how the exercise of power by actors at three different levels of the health system — individual, program and societal — influences policy.

It all started with an idea and $17,000.

Tony Hoang, a chemistry Ph.D. candidate, is one of UAlbany’s most prolific student entrepreneurs. In just the last 12 months, he’s launched a biotech startup, wrote a blog post for the Huffington Post, was named to Albany Business Review’s 2017 “40 under 40” class, and earned the paper’s “Technology Entrepreneur” award.

Hoang says much of his success can be credited to Blackstone LaunchPad, a free campus-based program designed to support student, staff and alumni entrepreneurs. He won $17,000 through Blackstone LaunchPad’s first business plan on-campus competition in April 2016.

His first-place idea, Advance Modular Instruments (AMI), promises to be a boon to health sciences researchers, providing fast and efficient tools to enhance research in biology and chemistry labs. AMI launched last summer with the goal of developing and commercializing several technologies that will be sold through the company, including a centrifuge machine attachment that helps scientists monitor the separation of particles.

“It has been a long process, but I am excited to share my inventions with scientists who can benefit from them,” Hoang said. “We want our customers to have a fast, cost-effective and hassle-free research experience.”

UAlbany’s Life Sciences Building has given Hoang, a native of Vietnam, his own lab space where he’s continuing to develop the technologies while finishing up his Ph.D. requirements. Following graduation, he plans to give his full attention to his biotech startup.

continued on page 29
Pathways to Health  •  2017 Research Report  •  University at Albany

Halting the Spread of HIV

the Undergraduate Health Disparity Research Fellowship, student positions are designed to increase the quality of training provided to future behavioral researchers conducting investigations on health disparities. Dr. Archantha Krishnan, assistant professor of communication, is examining the effectiveness of mobile health (mHealth) tools in combating HIV/AIDS, particularly in underserved communities. mHealth technologies can seamlessly monitor and provide real-time data of dosing reminders, medication adherence, and solicitation of care, all of which result in better feedback and improved communication between patients and their care providers. These technologies already have proven to be effective for other patients with chronic conditions, such as diabetes, asthma, tuberculosis and malaria. Krishnan’s work shows that text messages are especially effective in reminding participants to keep medical appointments and that participants found them useful and easy, from places as geographically diverse as Latin America to South East Asia. Despite the promising trends, mHealth interventions are understood in populations that could benefit from their use. Among these are some of the most vulnerable members of society, including sex workers, those with substance abuse disorders, injection drug users, prisoners, and those who are homeless or suffer from mental illness and neurocognitive impairment. For now, Krishnan and her colleagues at UAlbany will continue the battle to halt one of the world’s most significant epidemics. •

Closing an Unhealthful Gap

professor of environmental health sciences, has nurtured one of the most successful projects in the U.S.: the Upstate KIDS study, which examines the long-term health of children from infancy through adolescence. Supported by the NIH’s Eunice Kennedy Shriver National Institute of Child Health and Human Development and the New York State Department of Health, Upstate KIDS tracks the growth and motor and social development of children given the growing use of infintery treatment, the increasing occurrence of maternal obesity and pregnancy complications, and rising maternal age at birth. From 2008 to 2010, more than 6,000 mothers and their 6,000 children born from the 57 counties of New York (excluding New York City) joined the study, providing valuable data to track health outcomes for mothers and their children from all walks of life. Among her key projects, Bell examines the association of adverse reproductive outcomes with occupational and environmental exposures. She has helped design a study to assess the relationship between reproductive outcomes and levels of air pollutants. The Upstate KIDS dataset is also adaptable to other issues, including health barriers facing rural populations, such as farmers and farm workers, in settings where specialized care is lacking. •

Ending Risky Business

absolutely fascinating. In addressing adolescent health risk behaviors, Schiomer also looks at epigenetics — marks on DNA than can change gene expression — in conjunction with family environments, examining if child epigenetic patterns differ as a result of parent-child relationships. In much of his work, he applies methods and theories from evolutionary developmental psychology and prevention intervention. His current research-funded activities also include a Jacobs Foundation study on the relation between candidate genes and female pubertal timing and risky sexual behavior, and a genetically informed sibling study designed to assess fathering effects on girls’ development, funded by the National Science Foundation. •

The Environment for Health

many youth, especially within gangs. That means gun-turn-in programs can help reduce crime and injury, Lizotte said. “This study can go on forever,” Lizotte said, as over time a study of adolescents becomes a study of aging. Dr. William Alex Pridemore, professor and dean of SCJ, studies the intersection of social structure, violence, criminal justice and health. His work reveals: • Men who have been incarcerated face a greatly higher premature mortality • Neighborhoods with elevated concentrations of alcohol outlets have higher violence rates • Nations with greater levels of poverty have higher homicide rates • Sweeping societal events such as the collapse of the Soviet Union and the 1980s U.S. farm crisis can lead to increased hospital and suicide rates. Pridemore’s research also indicates that neighborhoods with higher levels of social organization and nations providing greater social support to citizens can mitigate the deleterious effects on violence and health. “From neighborhoods to nations, it is clear that social structure and public policy influence health outcomes,” Pridemore said. •

A Pipeline for New Research Leadership

of study. Reid is studying adolescent behavioral health, specifically on U.S. Caribbean black adolescents, saying the fellowship’s transdisciplinary experimental learning and research mentorship provide a strong foundation to increase her research skills, “and the community health task force will expand my professional network both locally and nationally.” Lawrence, with a long research interest in minority health and health disparities, said “the fellowship will not only further develop my research ability, but provide me the opportunity to collaborate with health departments and local community health task forces to advocate

The Leader in Erasing Health Disparities

fund dedicated to health disparities research training, UAlbany will provide numerous pathways and opportunities to recruits a more diverse workforce and to create a more conducive scholarly environment for teaching and research to meet the important moral challenge to our society of health disparities,” said Dr. Lawrence M. Schell, CEMHD director and professor of anthropology and prevention intervention. The five-year grant, administered by NIH’s National Institute of Minority Health and Health Disparities, leverages proceeds from the endowment to implement a wide range of research and capacity- building programs. It further redoubles CEMHD’s current efforts to create pioneering models and approaches to alleviating health disparities, while advancing leading research with the goal of eliminating minority health disparities in small cities and rural communities in Upstate New York.

A national leader in health disparities research and training, CEMHD was first established in 2004 under a three-year, $1.24 million NIH R24 EXPORT Center grant and further expanded in 2009 by a five-year $6.82 million NIH P20 Exploratory Center of Excellence award. Since 2012, UAlbany has invested more than $2 million in financial commitments to its health disparities research, training and outreach mission, expanding its national leadership position. •

Under-Researched Topics No More

contribute to a number of disorders, including insomnia, anxiety, depression, chronic fatigue and drug/alcohol addiction. The young researcher, winner of two National Institute on Drug Abuse travel grants and one training award, has research foci that include: • The neural mechanisms that underlie changes in the HPA axis and mood disorders after psychostimulant (such as methamphetamine) abuse. • Effects of elevated stress hormones during early life on brain and behavioral development. • Sex differences, sexual differentiation and the central nervous system, and the role of gonadal steroid hormones in regulating stress and mood-related behaviors, including anxiety and depression. •

Young and Contributing

implementation and shapes HIV program outcomes in Pakistan. College of Engineering and Applied Sciences doctoral students Meet Park and Varun Narayanan and public policy doctoral student Sora Park worked through UAlbany’s Center for Technology in Government to develop software that can create interactive data visualizations to aid healthcare patients through New York’s Health Data NY website. •
One of the ways UAlbany research makes an impact is through the licensing of innovations to companies and other organizations to create new products or solve pressing problems.

- UAlbany recently has focused attention on licensing information technology-based productivity tools, which is partially responsible for the increase in licenses in the past two years. One example is the Drug Recognition Expert (DRE) mobile app and database, developed by UAlbany’s Institute for Traffic Safety Management and Research. The DRE data entry and management system helps law enforcement agencies more effectively and efficiently conduct programs to identify drug-impaired drivers and remove them from the roadways.

- Technology created in the laboratory of Dr. Martin Tenniswood enables differentiation between indolent and aggressive forms of prostate cancer. The technology, licensed to startup company miR Diagnostics, uses profiles of non-coding microRNAs to determine a slow-moving cancer not requiring surgery or radiation therapy, or an aggressive tumor requiring intervention. Since about 70 percent of prostate cancers are slow form, this diagnostic technology can prevent needless and costly procedures, potentially saving up to $1.3 billion per year.
2016-17 President’s Excellence in Research and Creative Activities Award Recipients

ZAI LIANG  
Professor  
Sociology  
College of Arts and Sciences

SIWEI LYU  
Associate Professor  
Computer Science  
College of Engineering and Applied Sciences

LOUISE BURKHART  
Professor  
Anthropology  
College of Arts and Sciences

2016-17 Chancellor’s Award Recipients

BEN SZARO  
Professor  
Biological Sciences  
College of Arts and Sciences

SHEILA CURRAN BERNARD  
Associate Professor  
History  
College of Arts and Sciences

ALEX SHEKHTMAN  
Professor  
Chemistry  
College of Arts and Sciences