A Message from the Executive Director

DHSA is a powerful platform to accelerate interdisciplinary and translational research and education. The Alliance enables us to pool our resources to conduct cutting-edge biomedical research and to provide joint educational programs that prepare health professionals to work in teams.

With the rollout of healthcare reform, physicians will play an increasingly specialized role on a continuum of care that includes a broad range of other professionals. The planned health sciences complex at the Science, Technology, and Advanced Research (STAR) Campus will provide a venue for inter-professional training, facilitating care on that continuum by helping to break down the barriers often encountered in the traditional practice of medicine.

The STAR Campus will provide a physical home for the Alliance and will feature core labs and shared research spaces that invite basic scientists, clinicians, physician scholars, and students to work together in an environment that erases barriers across disciplines. The new site will also enable us to work with clinical partners, companies involved in developing medical devices, and businesses focusing on health and wellness.

The clinical partnerships established through DHSA are enabling us to provide outstanding residency opportunities at Christiana Care and Nemours, and we are working to expand opportunities at other hospitals and clinical centers throughout the state. Medical professionals tend to put down roots where they do their residencies, so these efforts will help the state to attract and retain healthcare practitioners.

DHSA is also contributing to the development of a strong biomedical research platform through seed grants and other initiatives to fund early-stage research, laying the foundation for projects that can be linked to bioscience and biotechnology companies. This research generates learning opportunities for students, financial opportunities for alliance partners, and patient access to the latest in clinical trials.

What we do here will impact all Delawareans, as we bring together a critical mass of experts and resources to make our state a healthier place for all of us. This includes training a new healthcare workforce, developing and testing new models of healthcare delivery, and supporting cutting-edge research that informs diagnosis and treatment plans.

That’s why we’ve named this new publication DHSA Impact—we want to share with our readers the impact the Alliance has on healthcare delivery and health-related research and education throughout the State. Join us as we share this first round of stories, which focus on global health, women’s health, heart disease, and childhood asthma.

Kathleen S. Matt, PhD
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Liz Hetterly may be only 21 years old, but after spending 10 weeks during the summer of 2012 in Bangladesh, she has gained the wisdom of someone much older when it comes to global health issues.

Under the guidance of Dr. Omar Khan, chair of the DHSA Global Health Working Group, Hetterly worked at the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) studying the health of mothers.

"Mothers are the foundation of our communities," Hetterly says. "The health of our mothers is a strong indicator of the health of the world we live in. Every day, 800 women die from preventable causes related to pregnancy and childbirth—99 percent of those occur in developing countries, and more than half occur in just 11 countries. One of those countries is Bangladesh."

"The underlying causes of maternal death are largely social and economic in nature," she adds. "I firmly believe that wealth, social class, and geographic location should not determine life and death."

Now a senior at the University of Delaware, Hetterly is a biology major, with minors in sociology and political science. Through the UD Dean’s Scholar Program, she has, in effect, designed her own academic program focusing on global health. Under that program, she will complete a senior thesis on barriers to access and effective use of family planning services among poor adolescents in Dhaka, Bangladesh.

Khan, who is Medical Director for Community Health and the Eugene duPont Preventive Medicine & Rehabilitation Institute at Christiana Care Health Systems, views DHSA as the perfect facilitator of programs like Hetterly’s.

"With DHSA, we can now think about offering majors in areas like global health that none of the partners could offer alone," he says. “Global health requires teachers that span disciplines, and back again

We often point to Delaware as the perfect place to do research and implement new programs because the state is a microcosm of the U.S. as a whole." – Omar Khan
including political science, medicine, anthropology, sociology, biology, economics, public health, and others. We need to provide undergraduates with broad experience, which requires team teaching.”

In Hetterly’s case, that team includes, in addition to Khan, three UD faculty—David Usher (biological sciences), Barret Michalec (sociology), and Michael Peterson (behavioral health and nutrition).

Khan also points out that global health projects provide students with an opportunity to apply locally what they learn globally and vice versa. “We often point to Delaware as the perfect place to do research and implement new programs because the state is a microcosm of the U.S. as a whole,” he says. “At the same time, we have a lot to learn from the rest of the world that can be applied here. ICDDR,B is one of the leading tropical medicine centers in the world, so this was a great opportunity for Liz.”

As Hetterly has learned, effecting change in developing countries is a complex undertaking. “Over a third of pregnant women are underweight in Bangladesh,” she says, “and 41% of children under five are short for their age. With stats like that, it seems that improving nutrition has to be the priority, regardless of sustainability. But I wonder if there’s a way to do it all, to do it the right way—improve nutrition and maternal health, strengthen food security, and promote sustainable agricultural practices all at the same time.”

She has also come to understand that cultural and political issues can get in the way of real problems like malnutrition being addressed. During her first month in Bangladesh, she attended, “Invest in Nutrition Now: A Smart Start for Our Children, Our Future,” which was a meeting to present recent data on the economic viability of a comprehensive nutrition program in Bangladesh.

During the Q&A session following the presentation, Hetterly was disappointed to hear government and other officials place the blame for malnutrition on women for not breastfeeding exclusively for the first six months of their babies’ lives.

“I was shocked at how certain individuals extraordinarily simplified a complex problem,” she says. “As I saw each day at ICDDR,B, malnutrition involves many factors, including poverty, poor water quality, and infectious disease, in addition to breastfeeding.”

“I saw babies suffering from acute and chronic malnutrition, with additional diagnoses of pneumonia, sepsis, acute respiratory infection, and even a ventricular septal defect,” she says. “Did the problems of these severely underweight babies all boil down to a lack of breastfeeding?”

Usher, who is associate chair of biological sciences at UD and has served as chair of the DHSA education taskforce, points to the importance of a program in global health from the standpoint of education.

“The National Institutes of Health has mandated that medical education include programs to increase cultural awareness among healthcare professionals,” he says. “Each of the DHSA partners has a global health program, and under the umbrella of the alliance the combined programs
create new and exciting opportunities for healthcare professionals and students like Liz Hetterly.”

Hetterly is just one example of the synergy growing out of DHSA collaborations in the area of global health. Khan explains that the Global Health Working Group came together in 2010, with the group first assessing capabilities and needs.

In February 2012, Khan chaired a global health symposium at Christiana Care. “That event helped us all get to know each other better,” he says. “Next, we wrote a joint grant to develop a common global health elective framework, and we’re planning another symposium next year, focused more on education. We’ve also developed a global health curriculum for residents at Christiana Care.”

Khan was recently named chair of the American Public Health Association’s Section on International Health. APHA is the oldest and largest public health organization in the world, with a major annual meeting that draws some 15,000 attendees.

“One very important aspect of my job as chair of the DHSA Global Health Working Group,” Khan says, “is not only connecting my very accomplished colleagues from across our four institutions but also scaling us up to be a regional leader.”

“DHSA is structured to be more than the sum of its parts—it’s intended to enhance our collective capabilities beyond those we currently have as individual institutions,” he continues. “In order to develop these capabilities, we must have alliances and connections with groups from across the country and internationally. Having DHSA leadership in APHA leadership positions gives us one such presence. It can also promote the great work of DHSA to an international audience.”

As for Hetterly, she also learned how quickly global becomes local and vice versa.

She met “Dr. Chris” while in Parbutipur with ICDDR,B visiting the Rang-Din Nutrition Study.

“When I mentioned that I was from the University of Delaware,” Hetterly says, “she told me that although she’s originally from Ohio, she did her residency at Christiana Hospital, and her sister graduated from UD’s physical therapy program in 1991. Now Dr. Chris works for LAMB, a Lutheran mission in Parbutipur that runs an amazing hospital and community health program.”

It truly is a small world. ✤

Editor’s notes:
Liz Hetterly’s trip to Bangladesh was supported by the Plastino Scholars Program, which awards grants to undergraduates to support self-designated, off-campus projects of their passion.

Omar Khan can be reached at OKhan@Christianacare.org.
Delaware may be small, but its size is an asset in helping people connect and collaborate so they can compete on a national level.


Close to 100 people turned out for the event, which was held at the University of Delaware.

Kathy Matt, dean of the UD College of Health Sciences and executive director of DHSA, welcomed the attendees and congratulated alliance partners Christiana Care Health System and Nemours/Alfred I. duPont Hospital for Children on the grants, which were awarded by the Centers for Medicaid and Medicare Services.

Christiana Care received $10 million for a project focused on cardiovascular disease, while Nemours was awarded almost $3.7 million to investigate childhood asthma.

The research is not about developing better pacemakers or inhalers — instead, it will focus on using existing knowledge to improve patient outcomes and reduce costs.

William Weintraub, M.D., John H. Ammon Chair of Cardiology, will lead the Christiana Care team in creating and testing a system that will use a heart disease “data hub” and case managers to improve care for post-myocardial infarction and revascularization patients.

“Our work through this grant will result in patients experiencing an improved quality of care and an improved quality of life,” said Weintraub, who is also director of the Christiana Care Center for Outcomes Research. “The advantage of our proposal is that it is designed to work with existing hospital and information systems so we can zero in and customize our care of patients in the most efficient and effective manner.”

The Nemours project will foster healthier neighborhoods through partnerships between the children’s hospital and neighborhood leaders that focus on asthma trigger reduction in homes, schools, child care centers, and other community settings. It will also increase coordination of services by integrating care with community support services and local government initiatives to provide healthier environments for children.
“Our ‘medical home’ work will benefit not only the children we see at Nemours but also their neighborhoods and the surrounding population,” said Nemours CEO Kevin Churchwell.

Carper, Coons, Markell, and Carney all stressed that healthcare costs can be contained only through prevention and more efficient delivery of care.

“Both of these award-winning Delaware programs aim to reduce the cost of care through prevention,” said Carper. “By preventing disease and illness from getting worse or starting in the first place, we can increase Delawareans’ quality of life and bring down the costs of care by reducing expensive emergency room visits and hospital procedures. Programs like these are at the very heart of the Affordable Care Act.”

Markell shared a cautionary tale about the downward spiral that can occur when the working poor experience a health emergency. He cited the example of a single mother living in a mold-infected apartment with a child who has asthma. The unhealthy living conditions and poorly controlled medical condition can lead to emergency room visits, unpaid bills, falling credit scores, rising interest rates, and job loss.

“That’s the cycle we need to break,” he said.

Carney referred to the current cost of healthcare as “unsustainable and a burden on American businesses and families.”

“The resources announced today will be used to identify and develop best practices for improving patient care while reducing costs,” he added. “Nemours and Christiana Care have developed innovative approaches to accomplishing this goal, and I look forward to their work being used as an example to promote quality, efficient health care nationwide.”

Coons said the funding will give the health care workforce the tools they need to provide more thorough, accurate and efficient care to patients.

“I feel strongly that these programs are worth investing in because the payoff will be huge,” he said. “They will not only save money for years to come, but they will also save lives.”

Matt pointed to the University’s new Science, Technology and Advanced Research (STAR) Campus as the catalyst for enhanced collaborations in the future.

“Right now, DHSA is a virtual organization, but the rollout of the STAR Campus will provide a physical space where we can all work together in creating interprofessional education programs and conducting translational research,” she said.

Bridging the Divides

Led by William Weintraub, John H. Ammon Chair of Cardiology, the CCHS team will create and test a system that will use a heart disease “data hub” and case managers to improve care for post-myocardial infarction and revascularization patients, the majority of them Medicare or Medicaid beneficiaries.

Christiana will integrate statewide data from the Delaware Health Information Network with cardiac care registries from the American College of Cardiology and the Society of Thoracic Surgeons, enabling more effective care/case management through near real-time visibility of patient care events, lab results, and testing.

This innovation will decrease emergency room visits and avoidable readmissions to hospitals and improve interventions and care transitions.

Optimizing Health Outcomes for Children with Asthma

Led by Mary Kate Mouser, executive director of Nemours Health and Prevention Services, Nemours is partnering with public agencies and UD to enhance family-centered health homes by adding services for children with asthma and developing a population health initiative in the neighborhoods surrounding targeted primary care practices.

The intervention will also increase coordination of services by integrating care with community support services and local government initiatives to provide healthier environments for children with asthma in schools, child care centers, and housing, and by deploying community health workers to serve as patient navigators and provide case management services to families with high needs.

The goal is to reduce asthma-related emergency room use and asthma-related hospitalization among pediatric Medicaid patients in Delaware by 50 percent by 2015 with incremental declines in 2013 and 2014.

In addition to UD, Nemours is partnering with Delaware Health and Social Services, Division of Medicaid and Medical Assistance, and Division of Public Health, the South Wilmington Planning Network, Healthy Kids Collaboration in Kent County, Sussex County Health Promotion Coalition, and United Way of Delaware.
Dr. Richard Derman, M.D., is Marie E. Pinizzotto, M.D., Endowed Chair of Obstetrics & Gynecology at Christiana Care Health System. Dr. Derman served in a number of senior leadership roles prior to his tenure at Christiana, and he has held the positions of associate dean for clinical research, interim associate dean for research, associate dean for women’s health, Schutte Chair in Women’s Health and professor of obstetrics and gynecology at the University of Missouri-Kansas City School of Medicine, Kansas City. Dr. Derman is a principal investigator of the Global Research Network for Women’s and Children’s Health, funded by the National Institutes of Health.

We talked to Dr. Derman about his view of the role DHSA is playing in research and education, with a particular focus on his area of interest—women and children’s health.

Q Dr. Derman, can you talk about the value added by DHSA in women and children’s health?

A We had a great DHSA conference last year on Women and Children’s Health, which helped bring people together to address issues in this area.

DHSA provides an excellent model from an educational point of view. We’re unique in the U.S. in having a virtual academic center that has expertise in so many areas.

The partnership enables us to fill gaps. For example, we can call on the University of Delaware if we need an anthropologist interested in women’s health or a psychologist knowledgeable about depression in the NICU. And once UD develops the STAR Campus, medical students from Jefferson will be staying there during the entire period of their residency.

Q Can you give us some examples of research that has been carried out by DHSA partners and its impact statewide?

A Delaware is truly a microcosm of the nation as a whole, so if we do a pilot project here and it’s successful, we can publish the results and have an impact across the U.S.

For example, Delaware is one of the only states in the nation that have, over the past three years, reduced their preterm birth rates. How did we do it? Under the leadership of Dr. Matthew Hoffman [director of education in Christiana Care’s Department of Obstetrics and Gynecology], we’ve launched a statewide initiative to administer intramuscular progesterone to women with a history of delivering their babies early. With state support, we’ve had an impact that can be measured.

We’ve also established a standard of care prohibiting elective inductions before 39 weeks that’s now being used by partners across the state.

Over the past couple of years, we’ve begun to build the capacity to evaluate and share information with our partners, and we’re working with the state to move translational research forward.
The two recent grants from the Center for Medicare & Medicaid Innovation also illustrate this point [see related article on p. 5]. These grants weren’t made in a vacuum: when proposals are written for programs like these, DHSA is important and empowering in the decision to award funding.

Seed grants—from DHSA as well as from internal programs within partner organizations—are empowering. But we’ve learned that requiring seed grant teams to have all four partner organizations represented is not the way to go.

Another enabler of research is our themed meetings.

What about global health?

It speaks to our collaborators that we can have an impact on the level of care not only across the country but also internationally through global health initiatives.

We have a global economy, and global health matters.

Partnerships are helping us develop education programs in global health [see related article on p. 2].

In global health research, I’ve been PI on an NIH grant with the Nehru Medical School in India for the past 11 years, where we’re looking at the leading cause of death in women and babies—post-partum hemorrhage. Based on a paper we published, WHO [the World Health Organization] adopted our approach as an international standard of care.

I’ve also worked with Omar Khan to place students and residents interested in global health and women and children’s health at international sites.

What are some other resources that are enabled by DHSA?

DHSA lets us share capabilities through core facilities that are available to all partners, such as the simulation center here at Christiana Care. This core facility is available to anyone at a DHSA partner institutions interested in outcomes research. It’s one of finest in the U.S. and can be used to teach a broad array of topics ranging from EMT drills to from surgical techniques.

Our joint fellowship with Jefferson in fetal and maternal health is another example. This fellowship enables the training of future leaders in an area that is increasingly important area in the U.S. as well as globally.

Through our center of excellence in Women and Children’s Health, we do a variety of consumer-based educational activities. This fits very well with DHSA, not just CCHS, because we want to include everyone throughout the state.

These collaborations are moderately strong now and will continue to strengthen over time. I think we’ve just begun to flex our muscles.

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Research Pilot Grants

“Mechanisms of Castrate Resistant Prostate Cancer involving the Androgen Receptor in the Bone Microenvironment”

“JAM-A - A Potential Risk Factor for Dilated Cardiomyopathy”

“Discovery of Inhibitors Against the Ubiquitin Specific Protease 11 in Human DNA Damage Response”

“Linking Genotype to Phenotype: A pilot Project to Create a Research Data Warehouse of Biospecimen and Omic Information”

“Relationships Between Cortical Motor Organization and Response to Exercise Interventions in Children with Cerebral Palsy”

“Novel Approaches to the Study of Determinants of Childhood Obesity Utilizing Health Information Systems”
Co-Investigators: Deborah Ehrenthal, Kristin Maiden – CCHS, Judith Ross – TJU/Nemours; Samuel Gidding, David West, Lou Bartchesky – Nemours; Ben Carterette and Michael Peterson – UD

“NLGN4Y Gene Dosage Effects in Human and Cellular Models for Autism”

“A New Frontier: Using Linked Pharmacy Data to Understand Primary Nonadherence and Therapeutic Inertia in Hypertension”

“Nanotechnology Based Drug Delivery for Childhood Leukemia”
Co-Investigators: Ayyappan Rajasekaran – Nemours, Xinqiao Jia – UD, Scott Waldman – TJU, Robert Witt – CCHS
Research Symposia

2009: Stronger Health-Based Partnerships

2010: 2nd Annual – Quality Care/Patient Safety & Comparative Effectiveness Research – 275 participants

2011: 3rd Annual – Enhancing Translational Research & Approaches to Treating/Preventing Chronic Disease – 230 participants

2012: 4th Annual – Building a Translational Research Network – 170 participants

2013: 5th Annual Research Symposium Friday, May 10, 2013

Special Topic Conferences

December 2010 – Women’s and Children’s Health Research – 270 participants

October 2011 – Creating the Healthcare Workforce of the 21st Century – 280 participants

January 2012 – Collaborative Education for Clinicians and Scientists – 60 participants

February 2012 – 1st Annual Global Health Symposium – 80 participants

November 2012 – Creating Health Partnerships by Engaging Individuals, Providers, and the Community in Health Decisions – 120 participants

February 2013 – 2nd Annual Global Health Symposium

April 2013 – Mentorship for the Clinical and Translational Scientist

Previously Funded Education Pilot Grants

Development of a Post-Baccalaureate Level Health Coaching Certificate Program – Michael Peterson (UD)

To be Funded Education Pilot Grants—2012

Establishing an Interdisciplinary Global Health Education Site for DHSA Partners – Omar Khan (CCHS)

Clinical Immersion Experience for Biomedical Engineering Students – Jill Higginson (UD)

Instrument Development to Assess a Debriefing Facilitator Simulation Education of Healthcare Providers – Jennifer Saylor (UD)

Development of a Certificate and Masters Health Informatics Program – Rosemary Kennedy (TJU)
The Alliance enables partner organizations to collaborate and conduct cutting-edge biomedical research, to improve the health of Delawareans through access to services in the state and region, and to educate the next generation of health care professionals.

DHSAs unique, broad-based partnership focuses on establishing innovative collaborations among experts in medical education and practice, health economics and policy, population sciences, public health, and biomedical sciences and engineering.

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