Dr. Matthew Goodwin and doctoral student Oliver Wilder-Smith are transforming the way we look at healthcare.
Dear Alumni, Parents and Friends,

Welcome to the fall issue of Vital Signs and the new academic year. I am starting my first full year as Bouvé’s interim dean. As many of you know, I am hardly new to Bouvé or to Northeastern, having served most recently as interim vice provost for undergraduate education and dean of the School of Pharmacy.

I am proud of Bouvé’s many initiatives, including the integration of healthcare and technology, the subject of our cover story. Also highlighted in this issue is an innovative PhD program based on a partnership of industry with our Laboratory of Biomaterials and Advanced Nano-Delivery Systems (BANDS). This partnership will undoubtedly distinguish Bouvé’s nanoscience doctoral training from that of other academic institutions.

The involvement and strength of Bouvé alumni continues to inform and fortify us. I wish to thank the many alumni who completed a recent survey concerning Vital Signs and Bouvé. A majority of respondents view Bouvé as a dynamic college that is on the move, and at least one-third want to know more about healthcare trends. Our work and our aspirations represent some of the best developments in the healthcare field, which is increasingly collaborative and interdisciplinary.

When I meet alumni, I am struck by how easily and enthusiastically they engage with each other, often reminiscing about life on campus or in training. Every November we honor our nation’s veterans, a look at the work of our military alumni (see page 8) makes us proud and thankful. This year we also celebrated 50 years of excellence in the Department of Communication Sciences and Disorders and 100 years of physical therapy education in Bouvé (see page 6). I also see the growing entrepreneurial and creative spirit of our alumni—driving us in new directions within our training programs as well as in special programs like our Health Sciences Entrepreneurs (HSE). As described in this issue, HSE recently celebrated 10 years and, in doing so, recognized the leadership of Joseph Fleming, PAH ’70, MS ’71, and Christopher Ford, DMSB ’73.

Our faculty and staff, and the learning communities formed by students, provide a fruitful environment for leading-edge research and innovative teaching and practice that will change lives for the better. I am pleased to report that 18 new faculty joined us this year, with two noteworthy administrative appointments: Nancy Hanrahan, PhD, RN, FAAN, joins us as dean and professor in the School of Nursing, and Carmen Sceppa, MD, PhD, has been appointed chair of the Department of Health Sciences. Both are outstanding educators, researchers, and leaders. We welcome them, and all the new faculty, to their new roles.

Help us to tell the great stories about achievements in the Bouvé community by sharing your ideas and information about your current professional roles and experiences. We want to be sure to keep you updated on important activities and trends in healthcare.

Sincerely,

John R. Reynolds, PharmD
Interim Dean, Bouvé College of Health Sciences
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TECHNOLOGY THAT IS CHANGING THE FUTURE
The collaboration between Bouvé and CCIS is transforming the way we look at patient care

“Northeastern has access to almost all of the health professionals who drive the healthcare system,” points out Associate Professor Stephen Intille, PhD, underlining the richness of research and practice opportunities in the Bouvé College of Health Sciences in connection with the College of Computer and Information Science (CCIS). The growing field of personal health informatics bridges Bouvé and CCIS and is yielding cutting-edge research initiatives and training programs that are all designed to improve the patient care experience. The widespread availability of new technology is helping us to better educate patients and is paving the way for a new era of self-management and self-care.

The personal health informatics field encompasses design and evaluation of technologies that improve health and wellness with the potential to transform healthcare over the lifespan. This involves complex efforts to create and adapt sensors for reliable use; develop algorithms that will accurately capture human behavior in the moment; and measure technology’s impact on health improvement over the long term. Comments Professor Carmen Sceppa, PhD, chair of the Department of Health Sciences at Bouvé, “Our interdisciplinary research facilitates the connection between how healthy living can inform technology and how technology can be used to ensure healthy living.”

With a joint appointment at CCIS and Bouvé, Intille came to Northeastern in 2010 to develop and co-found the Personal Health Informatics doctoral program. “Students who apply to our program don’t see anything like it anywhere else,” he says. Researchers in personal health informatics envision many cost-effective ways to help millions of Americans stay healthy and fit, recover from illness, and manage chronic conditions. Intille explains, “An innovative mobile or home technology can help improve someone’s day-to-day life, and especially so if it can help us understand human behavior. This has led to a line of research in measuring and motivating behavior change.” Such technology applications can provide insights into disabilities as well.

Early diagnosis and interventions for children with autism—
Matthew Goodwin, PhD, an interdisciplinary assistant professor in Bouvé’s Department of Health Sciences and CCIS, is creating technology to help track autistic children in their homes and social environments. This will allow their teachers and caregivers to see the world as the children do and better understand what triggers their difficulties in coping or communication. The technology being developed can record physiological information from the body to document whether a child is declining or may be about to engage in maladaptive behavior. “The majority of research in autism is carried out in laboratory settings and focuses on higher-functioning Dr. Matthew Goodwin
individuals who can comply with novel environments, people, and activities,” Goodwin says. For the more severely impacted segment of the autism population, who have intellectual and communication challenges, “a lab environment can be very unsettling and therefore skew results or, worse, prevent participation in research altogether.”

Goodwin’s team is developing tools that, in a gentle and unobtrusive manner, can be affixed to clothing or the body, or be set up in the home or school environment (e.g., microphones and tiny cameras). Currently Goodwin is working with a lightweight wristband, similar to a watch, which measures four physiological signals: heart rate, surface skin temperature, sweating, and three-dimensional movements. A change in the wristband’s color could denote a need for intervention. Data from the wristband could also be collected and saved, allowing caregivers to understand behavior patterns and progress over time.

“We will be able to access this data from a distance, and it includes time stamps so we have the potential to trigger real-time prompts for changes—for example, a text message to a caregiver or teacher.”

Goodwin and his team are in the proof-of-concept stage, the process of scientifically validating the technology to be sure it neither underestimates nor overestimates measures of various internal properties. Goodwin also has to be sure non-technical people can easily use the wristband.

Pressing ahead on validation, Goodwin is working with a commercial partner that eventually will make the wristbands widely available for use by teachers and families.

Rapid growth of innovations in personal health informatics across the university — CCIS Professor Tim Bickmore, PhD, a core faculty member associated with the doctoral program who is deeply involved in virtual agents, has created a “Hospital Buddy.” Already tested in a hospital setting, this virtual agent uses information about the patient’s behavior and the activity of the staff to interact with the patient directly and help improve care.

Explains Intille, “The Hospital Buddy is one example of a patient-facing computer interface providing the patient with the ability to talk to a virtual nurse to obtain information and answer his/her questions.” Intille emphasizes, “This does not replace the human touch. Most technology augments it.”
Dan Feinberg, MBA, is the director of the Health Informatics Graduate Program, a master’s-level program that prepares students for roles in healthcare practices. Coming from many disciplines, the students have a driving interest in healthcare and an ability to work with quantitative data. Feinberg points out, “We are in stage 3 of the implementation of the Affordable Care Act, meaning: How do we improve our care? We have to create management practices and systems that make better use of data to improve health and save lives.” Recently, a research path was added to the master’s program to help students prepare for an application to the PhD program.

**Testing technology’s efficacy** — When introducing a technology, it is critically important to measure its effectiveness over the long term. Intille explains, “We have to get beyond having a ‘neat’ idea and we must prove that it actually works. Most people are familiar with the evidence in weight loss that a lot of diets may work for a short period of time, but there is little evidence they work for a long period.” Thus, Intille and his colleagues not only are creating new technologies, but also are continuously deploying them in the field to measure how well they work and to learn how to improve them.

**[We want to develop] algorithms that will recognize everyday activities and can drive the development of interactive preventive health tools that could ultimately be made available to people in a cost-effective manner.**  
*(STEPHEN INTILLE)*

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**Understanding Children with Unique Strengths and Challenges**

Oliver Wilder-Smith, a fourth-year doctoral student in Personal Health Informatics (PHI), first began engaging young children with autism while interning in a therapeutic after-school program. He comments, “The children can’t always self-report, so the use of wearable sensors has a role in helping gather information about early signs of autism.” Thus, his interest in applying technology to develop psychological interventions was born. He met his adviser, Matthew Goodwin, PhD, an interdisciplinary professor with dual appointments in the Bouvé College of Health Sciences and the College of Computer and Information Science (CCIS), when he approached MIT’s Media Lab as an undergraduate to work as a research assistant in its Affective Computing Group. Goodwin later gave him the heads-up about the new doctoral program at Northeastern. Goodwin is a cofounder of the Bouvé-CCIS Doctoral Program in Personal Health Informatics.

Autism affects one in 68* children in the U.S., with a lifetime cost of care in the millions of dollars. Identifying problems early improves the chance of better outcomes. In his dissertation research, Oliver seeks to understand the psychological and neural underpinnings of social relationships and social reciprocity. “These children struggle with the normal dynamics of social relationships,” he says. “We are working to develop novel computational methods to measure and analyze social interactions. My focus is ‘bio-behavioral synchrony.’ In the normal dynamics of social relationships, certain physiological variables ‘sync up,’ such as heart rates or even perspiration levels. If there are discrepancies—e.g., the biological indicators are not reciprocated—we may have an early window into what may be going on with a child.”

“We apply wearable sensors during parent-child play or when a therapist is working with a child,” Oliver continues. “When we use sensors to identify very sensitive physiological measures, we are potentially detecting changes that are much smaller than what we are consciously aware of. Also, we are developing new computational methods to statistically analyze these data.” This approach will also permit large-scale screening at a level not possible today by simple, direct observation.

Collaboration is central to this work. Oliver’s team is using data from UCLA colleagues who are developing therapeutic interventions for autistic children who have little spoken language. He also is experimenting in Goodwin’s lab, the Computational Behavioral Science Lab, where he studies parent-child interactions. He likes the special aspect of the PHI doctoral program in that it is interdisciplinary from the start. “You can do scholarship in both areas—computer science and health sciences—without sacrificing one for the other.” His fellow students come from the allied health and clinical professions, engineering, neuroscience, and computer sciences. “There is a lot of team-based work and learning how to work together to create something innovative,” says Oliver. “You have to have a passion for both the health aspect and a fascination with and understanding of applying technology”—all in the service of improving health.

*http://www.cdc.gov/ncbddd/autism/data.html*
HSE Celebrates 10 Years

Health Sciences Entrepreneurs (HSE) at the Bouvé College of Health Sciences started in 2005 as an educational program providing opportunities for students to meet entrepreneurs and hear about different career paths. In addition to offering annual educational events, HSE established a formal mentoring program in 2010 for alumni, faculty, and graduate student ventures. Since then, more than 45 health science companies have been guided through the challenges of start-up. The 10th anniversary celebration was held on October 8 in the new Skyline Room on the 17th floor of East Village, the Boston campus’s newest residence hall. One hundred and thirty guests enjoyed remarks by Atlas Venture partner Peter Barrett, PhD ’79, who, after obtaining a PhD in analytical chemistry from Northeastern, decided he wanted to work on real-world problems from the business side of science; he later cofounded Celera, the first company to sequence the human genome.

Examples of HSE-sponsored innovations include an app to help nurses improve patient safety; a 3-D printer to create prototypes for designers and engineers; a synthetic-voice technology for the speech-impaired; and a robotic device that will help stroke patients walk again. Such innovations have been inspired and guided by the celebration’s honorees: HSE founder Joseph Fleming, PAH ’70, MS ’71, and HSE board member Christopher Ford, DMSB ’73, champion of HSE and mentor, both passionate entrepreneurs who have shared their expertise with entrepreneurs. Interim Dean Jack Reynolds commented, “With Joe at the helm of this program, we have seen this seed of an idea turn into a signature program at Bouvé and ignite the NU mentoring ecosystem...”

Joe Fleming, P’70, MS’71 and Chris Ford, DMSB’73

“To find out more about HSE, visit www.neu.edu/hse.”

Peter Barrett, PhD’79 talking with Therapeutic Innovations at the HSE 10th Anniversary Celebration

SPOTLIGHTS

Bouvé Milestones

“With Joe at the helm of this program, we have seen this seed of an idea turn into a signature program at Bouvé and ignite the NU mentoring ecosystem...” (JACK REYNOLDS)
100 Years of Bouvé Physical Therapy

The remarkable milestone of 100 years was celebrated by the Bouvé Department of Physical Therapy, Movement and Rehabilitation Sciences, which has its origins in the graduating class of the Boston Bouvé School for Physical Education in 1915. Alumni invited to the celebration included graduates of physical therapy, physical education, and other Bouvé programs. During the afternoon celebration, more than 60 members of the Bouvé classes of 1968 and earlier enjoyed a brunch and an archives exhibit, reflecting the importance of Bouvé and its great teaching of physical education and therapy. Lots of singing was heard from all!

Features of the evening gala celebration at The Colonnade Hotel, enjoyed by more than 225 alumni and friends of the program, were dinner, music, awards, and a keynote speech by Marilyn Moffat, PT, PhD, FAPTA, professor of physical therapy at New York University. An accomplished teacher, leader, and practitioner, Moffat is currently president of the World Confederation for Physical Therapy, where she has developed educational programs and standards of practice. As past president of the American Physical Therapy Association, she created a guide to global physical therapist practice. A distinguished faculty award was given to Associate Professor Robert Sikes, PhD, whose expertise includes the neural circuitry of pain. Distinguished alumna awards were presented to Rita Wong, BB ’71, EdD, PT, FAPTA, and Kate Barrett, BB ’57, PhD. Wong is a professor of physical therapy and associate dean for graduate and professional studies at Marymount University, where she has specialized in geriatrics and the translation of evidence into practice. Barrett, an athlete, teacher, and leader-scholar, went on to a distinguished teaching career with a specialty in the art and science of human movement as a basis for skill development.

“This has been a magical day,” enthused Maura Iversen, professor and department chair, “truly an opportunity to learn from our early leaders, recognize excellence in clinical practice, research, and education, and begin to pave the way for the next 100 years of physical therapy!”

Communication Sciences and Disorders Celebrates 50 Years: 1965–2015

“...the intergenerational bonds of our community’s commitment to excellence were personified when second-year undergraduate Andrea Vuono received an award named after the department’s founder from the eponymous Dr. Robert Ferullo. All who were present reveled in celebration of a half century of research and education in speech-language pathology and audiology at Northeastern. We look forward to building upon and extending our founder’s vision in our next 50 years.”

(ENNIO MINGOLLA, Professor and Chair, Communication Sciences and Disorders)

For more information on the CSD 50TH please see page 17
Captain Nicole Ioset, DNP ’15, is from El Paso, Texas, and has pursued her career while based in San Antonio. She was accepted to Northeastern University in 2012 in the U.S. Army Graduate Program in Anesthesia Nursing (USAGPAN) at Bouvé, where she earned a doctorate of nursing practice.

Nicole says, “During my years in the program and finally at commencement, the university went above and beyond to welcome me and my family.”

USAGPAN is based at Fort Sam Houston in San Antonio, Texas, and has roots dating back to World War I. In 2006 USAGPAN and Northeastern University began their cooperative agreement to “educate clinicians in the complexity of practice at the doctoral level and to be competent in the unique skills of anesthesia nursing.” As the program’s mission describes, these are leaders who can advocate for quality patient care in times of peace and, when necessary, in times of war, civil disorder, or natural disaster or during humanitarian missions. Many of Nicole’s classmates were active-duty Army, and some were “direct accession” and had joined the military to attend the program.

Nicole’s achievements are rooted in total dedication, long hours, and myriad clinical experiences that require flexibility and maintaining an intense focus on her goals. Her trajectory began in high school, when she decided at age 16 that she would join the Army. She was allowed to complete basic training before finishing her last year of high school. Nicole then joined the Army Reserve. She balanced her classroom and lab work with part-time active duty on weekends during her first two years of college.

She was influenced to go into nursing after she saw the special care her mother received from a nurse during an illness. In 2002 Nicole started her bachelor’s program at the University of Texas at El Paso; two mobilizations, though, took her out of school and then back. The first deployment was associated with Operation Iraqi Freedom; she served stateside at William Beaumont Army Medical Center in El Paso, since most of the staff there were deployed to Iraq. Later she served for 18 months in Heidelberg, Germany, to backfill at the Rear Detachment Headquarters at the Europe Regional Medical Command.

Now 32, Nicole has seen the inside of many hospitals and surgery suites and experienced a variety of cultures in the world. She is trained to serve military members and their families as a nurse anesthetist. “Many of my classmates in high school were children of military personnel, and my dad was an active member of the Army,” Nicole says. “My training in the nurse anesthetist program at Bouvé, helped me develop the military demeanor and yet the compassion required to help patients.”

At Brooke Army Medical Center at Fort Sam Houston, where she often works well into the night in surgery, Nicole says, “I meet the patient on the most stressful day of their life; I am their voice when they can’t speak. I am there to give the best possible care and keep them safe. I want to put their family at ease and let them know the patient is in good hands.”
After graduating from Bouvé in June 1945, I was sworn into the U.S. Army in August and reported to Fort Devens in Massachusetts on September 6 in the Physical Therapy Clinic. I was then assigned to Halloran General Hospital in Staten Island, New York. Joining the Hand Clinic with 150 patients, I was initially overwhelmed, but successfully organized the patients into groups of six with similar injuries. After 12-hour-a-day shifts, my colleagues and I spent most evenings in New York City taking in all the Broadway shows.

In May 1946 I received orders to ship out to Camp Stoneman in Pittsburg, California, for reassignment to the Philippine Islands. My first assignment was with the 248th General Hospital near Clark Field. I worked in the Dental Service as an assistant to a surgeon. My second assignment was at the 13th Station Hospital Outpatient Clinic. We had a leg whirlpool but no hot water as the steam autoclave was behind the wall, so we ran steam into the whirlpool’s cold water, which made an awful noise! I had an additional duty in the X-ray department assisting the doctor by: taking the X-rays of the female patients, pre reading each X-Ray and then labeling each with a diagnosis, this required me to become a quick learner, reading radiology books to increase my knowledge.

My third assignment was at the 10th General Hospital. When a Polio epidemic developed, I learned that none of the medical staff had any experience with Polio or respirators. Fortunately, my classmate Bev Winn and I had trained at Louisville General Hospital, in Kentucky, for two months, and had the experienced teaching of Bouvé physical therapy teacher Miss Constance Greene. I was incredibly grateful for this knowledge of Polio and respirators as the training of the hospital clinical staff fell on my shoulders. We worked in an open screen ward in a tropical heat of up to 99 degrees; we placed blocks of ice in the respirators since the tanks were so hot inside, and we used multiple fans to cool the patients.

I returned to the U.S. in May 1948, separated from the Army, and joined the Army Reserve. In September I entered Tufts College to complete my fourth year and graduate with a BS in Education. That fall I started work for Children’s Hospital. In 1957, as president of the alumni association, I participated in the dedication of the Ruth Page Sweet Hall at Tufts, named for a longtime dean and director of the Bouvé-Boston School (Bouvé moved to Northeastern in 1964).

I completed my master’s degree in education from Boston University in 1959; I later joined the West Roxbury VA Hospital, where we treated the injuries of Vietnam veterans. In 1974 I transferred to the Manchester, New Hampshire, VA Hospital as chief physical therapist, and later became a state-certified firefighter to work with the Mason, New Hampshire, Volunteer Fire Department. In 1984 I retired from the U.S. Army with the rank of colonel, ending a rewarding, enjoyable career. A few years later, I retired from the VA and physical therapy. Elected as a selectman for the town of Mason in 1990, I held that position for 23 years! I am still active today in the fire department, and I look forward to more happy years with many and varied activities.

Anne (Nancy) Richards’ sisters, Elizabeth “Betsey” Stoutamire, BB ’40-41 and Catharine Chapman, BB ’46-47, are also Bouvé graduates, and their mother, Leslie Cobb Warren, was a graduate of Boston School for Physical Education in 1917. Nancy continues the family’s legacy with an award in the Warren name.
Gifts in Action

School of Nursing Dean’s Fund
Thomas DeSisto, E ’73, DMSB ’78, and Marie DeSisto, N ’77, continue to make contributions to the School of Nursing and the D’Amore-McKim School of Business as they have been for the past 30 years. Marie is a graduate of the School of Nursing in 1977, and her husband, Thomas, is a graduate of the College of Engineering and has an MBA from the D’Amore-McKim School of Business. The DeSisto’s are also members of the Frank Palmer Speare Society at Northeastern, which honors alumni and friends who demonstrate their generosity and commitment to Northeastern through an estate provision or other planned gift.

Gift of art to Bouvé
A gift of art from Ivan and Bonnie Houlihan arrived on campus in September. This eclectic 16 piece collection features assorted media including sculpture, photos, ceramic and wood. The gift was part of a collection given to Bonnie by her close friend, Michael Abernethy. “Michael stressed the importance of education and travel to the students he mentored. When he passed away unexpectedly, I knew I wanted to honor his memory by doing something with the art that he himself would have done. With Northeastern’s top notch study abroad programs and dedication to excellence in education, I know Michael would have also felt there was no better home for the pieces” says Bonnie.

School of Nursing 50th Anniversary Scholarship Fund
Thomas and Mary Stangl, Parents ’16, made their second gift to the School of Nursing 50th Anniversary Scholarship Fund. Their gift, along with the contributions of many alumni and friends, has enabled this fund to reach an endowed level. The scholarship can be used to recruit or retain students, and is awarded based on academic excellence and integrity. The first scholarship will be awarded in 2017; the fundraising to build the scholarship fund continues.

For more information on giving to the scholarship, contact Tracey Geary, 617-373-6916
O. James Inashima Scholarship Fund

Dr. Osamu James Inashima passed away in June 2015. He served as the chair of the Biological Department at the New England College of Pharmacy which in 1962 became the School of Pharmacy at Northeastern University. Dr. Inashima was a professor beloved by students and peers alike, and was the founder of the Pharmacy Scholarship and Awards program at Bouvé. In 1987, in honor of his retirement, the O. James Inashima Scholarship Fund was established with gifts from faculty, staff, students, friends, and the Alpha Zeta Omega pharmacy fraternity. Memorial donations can be made by contacting Jennifer Trapp, 617-373-8831.

Dean’s Circle

The Bouvé College of Health Sciences Dean’s Circle, launched in May 2015. With an annual gift of $1,000 or more to any Bouvé fund or program, members play an important role in the college’s financial health while making a powerful statement about the value of a Northeastern education. To show our thanks, we are offering members access to programs and events that will present the leading-edge work at Bouvé in interprofessional health sciences instruction, experiential education, and research.

To find out more about becoming a member of the Dean’s Circle, please call Julie Norton, 617-373-4839.

Members

Melvin P., P’56, and Martha Aronson
Richard A. and Elizabeth Aronson, PNT
Robert J. Audet, P’56
Debra Band, BB’80
George D., P’57, H’98, and Margo Behrakis
Albert A. Belmonte, P’56, MS ’69
Jay Bernasconi
Ward C. Bourn
John C. and Kim J. Burger, PNT
Maureen E., Burke
Frank C. Condella, Jr., PAH’77, MBA’84
Eva Y., PAH’76, and Shu Ngan Chau
William W. Churchill, PAH’75, MS’83
Lawrence X. Clifford
John F. Cormier, MS’70
Kathleen M. Cotter
Cristina I., MPH’91, and Zoltan Csimma
Marie Falvey Desisto, N’77
and Thomas J., Jr., E’73, MBA’78,
Richard P. DiAugustine, P’64
Christopher P., PT’94, MPH’01,
and Susan C. Diehl, N’93
Janet E. Flagg, N’74
Joseph P., Jr., PAH’70, MS’71,
and Nancy Fleming, PAH’71
Christopher T. Ford, DMSB’73
Gary M. Frazier, PAH’81
James G. Gallagher, Jr., PAH’81
Louis J. Giannotti, Jr., PAH’81
Marlene Goldstein
Tracy K. Gosselin, N’93
William A. Gouveia, P’64, MS’66
Herbert P., P’55, and Marylou Gray
Carl C., PT’87,
and Nicoletta Vasta Gustafson, MS’87, PNT
David A. Hamel, MPH’85
Jane E. Harding, N’71
William C., P’74, and Patricia Hawk
Ana Alonso Herranz
Michael L. Hertz, PAH’75
William B. Hugg, Jr., DMSB’57, PAH’62
Paul Y. Inashima
Edward L. Jackson, P’70
Ban An Khaw
Karen C. and Linus K. Koh
Linda J. Kovitch, UC’81, MS’96
Carl P. LeBel, PhD’89
Karin N. Lifter
Diane H. Lupean, BB’65, MBA’81
William E. Mackey, Jr., E’58, ME’66
Bruno R., P’64, and Vivienne Mazzotta
Robert L., PAH’79, MS’83, PhD’93,
and Maureen A. McCarthy, PAH’79, MBA’97
Kristina L. McGill, PAH’75, MS’78
John J. Merianos, P’61
Ennio C. Mingolla
Nicholas J., PT’82,
and Maureen McBride Mitropoulos, BHD’84
John and Evelyn Friedman Neumeyer, Ed’78
Mary Jane Nichols, BB’61
Joseph R. Paulino, Jr.
Ravi Patel, E’13
Susan N. Peck, N’74
Paul and Maureen E. Petracca, PNT
Valeria A., UC’92, MS’95,
and Larry A. Ramdin, UC’94, MPH’14
Nirali M. Rana, PHARMD’04
John R. Reynolds and Lynne M. Sylvia
Anne “Nancy” Richards, BB’45
Andrew Saitas
Gerald E. and Florence S., MBA’83, Schumacher
Rita Shane
Robert A. Smaglia, MS’77
Thomas M. and Mary J. Stangl, PNT
Matthew Trombadore
David and Pamela Waud
William B. Webb
David P. Zgarrick

*as of October 15, 2015
The only industry-sponsored PhD fellowship program at Northeastern resides at the Bouvé College of Health Sciences. To get a picture of this innovative program, which originates with Professor Mansoor Amiji’s Laboratory of Biomaterials and Advanced Nano-Delivery Systems (BANDS), one needs to understand the breadth of research underway there. BANDS, based in Bouvé’s Department of Pharmaceutical Sciences, is a distinctive research organization among universities in the Boston area. With more than 20 postdoctoral associates, graduate students, and undergraduate students, its work is wide-ranging, including the development of biocompatible materials from natural and synthetic polymers that can encapsulate different types of drugs, small interfering RNA, peptides, and genes for delivery to disease sites. With regard to the “tumor microenvironment,” a current challenge is how to mediate or counteract drug resistance. Researchers are focused on a strategy that would enhance drug delivery by using novel nanoparticle systems that can be targeted within the tumor area.
In addition to running a demanding research laboratory, Professor Amiji, PhD is a Bouvé distinguished professor and chair of the department, cares deeply about being responsive to students. He hears increasingly from students, “I want to start something on my own,” typically in the area about which they feel passionate. This makes good sense to Professor Amiji when he notes the characteristic pace and prevalence of dynamic change in his research domain: “The future fellow must know their place in the context of constant change. We can help students adapt with the right sort of training. We have to encourage a new mentality wherein students must constantly ask: Where are the opportunities? And how do I position myself so I can take advantage of these?”

**Launching an industrial partnership** — Several years ago, in initial talks with Novartis, Professor Amiji and his counterparts at that firm could see that an industrial partnership would pave the way for a pharmaceutical company to deepen its understanding of the mechanics of new vaccines and to financially support student research, as well as for students to have access to state-of-the-art instrumentation and the continual mentorship of top working scientists. This would give industry an “insider’s” view of the quality level of education and training taking place at BANDS and in the Department of Pharmaceutical Sciences.

It turned out that formalizing this doctoral-industry relationship also created an important accountability both for the education of the student and for follow-through on the research at the sponsoring company. The responsible student-fellow forms a crucial connection between university and industry during the partnership. Ruchi Shah’s experience is exemplary of this model. Ruchi studied pharmaceutical sciences as an undergraduate in India; her family encouraged her to seek graduate education in the U.S. As she was completing her master’s at Bouvé, she was placed in an internship with Novartis. This was the fortuitous beginning of a fruitful academic future for her. The internship is one of the pillars of experiential learning at Northeastern, and it allowed Ruchi to grow as a research scientist and to be noticed.

This position at Novartis, her first-ever job, began in June 2011 and gave her the opportunity to see what the private-sector context was like, to explore whether she loved what bench science offered, and to observe an outstanding colleague whom she wanted to emulate. As a research intern in the Formulations Group at Novartis, she worked on the development and optimization of liquid chromatography techniques for the successful characterization of lipids, proteins, and nucleotides. When she expressed her admiration for her senior colleague and realized “she wanted to do what she does,” her supervisor counseled her that a PhD would be her best next step.

During Ruchi’s internship, Derek O’Hagan, PhD, the global head of vaccine development at Novartis and Ruchi Shah inside the GSK laboratories
Ruchi fills the new fellowship position. “There had been a few such partnerships at Novartis and the people in those positions were highly prized. In my vaccines group, we fashioned our first partnership with Professor Amiji, and Ruchi was able to start in 2012.” In March 2015, Novartis’s vaccines group was organized into the GlaxoSmithKline (GSK) vaccines division.

Today Dr. O’Hagan says GSK is looking forward to continuing the partnership. “Universities might benefit from doing this more broadly,” comments Dr. O’Hagan. “The outcomes are well worth dealing with the challenges.” As Dr. O’Hagan points out, some universities might struggle to have the strong range of capabilities and instrumentation, tested techniques, critical mass of talented people, and budgets to buy what they need; this is available at GSK. “Ruchi is a terrific example

co-workers for their input. I learned so much from them, and this helped me feel much more confident.”

Preparing to be a candidate for the fellowship — After a student has completed a master’s thesis and done an internship with a pharmaceutical company, he or she becomes technically eligible for the industrial fellowship. The next steps are to garner support from the industry, gain admission into the BANDS and GSK. Encouragement from Professor Amiji has made her a regular attendee of national vaccines conferences, including one where she also was a presenter. Similar encouragement from Dr. O’Hagan led her to conduct her research at the GSK vaccines research headquarters in Siena, Italy; she made two visits to the lab there and substantially advanced her work.

Professor Amiji says, “This is a collaboration that takes experiential learning to a new level. It also makes supreme sense given the dynamics of the research environment. I tell students: Think about your ideas and go out with your passion first. With regard to our new variety of fellowship opportunities, the learning is not just about textbook materials and didactic training; students get ‘hands on’ experience, and we simultaneously enrich this with courses and an internship. How the company feels about the student as an intern can set the stage for a potential fellowship there.”

The doctoral-industrial partnership enables students to pick a model that suits them. Let’s not put people in ‘buckets.’ (MANSOOR AMIJI)

of the kind of student and future mentor we can develop in this type of program; we expect to ask her to train the next fellow.”

“Northeastern is distinctive because it is engaged in strong formulation science,” Dr. O’Hagan continues. “We hope we have the type of team here where ego matters less, and the science matters more, and where investigators always get the support they need. We aim for an open, engaging, and productive environment.” Ruchi comments, “Whenever I was preparing a talk or a poster session, I could always turn to my PhD program, take additional coursework at Bouvé with qualifying exams, and successfully complete the thesis project.

In advising other students about the industrial doctorate, Ruchi finds herself saying, “Be a sponge and absorb everything in the two to three years [in the program].” She continues, “You can do this with a high level of personal organization and the constant direction and advice of your mentors. The internship and your positive feelings about the experience are very important.” She has had the double benefits of mentors at both Northeastern and GSK. Encouragement from Professor Amiji has made her a regular attendee of national vaccines conferences, including one where she also was a presenter. Similar encouragement from Dr. O’Hagan led her to conduct her research at the GSK vaccines research headquarters in Siena, Italy; she made two visits to the lab there and substantially advanced her work.

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To find out more about industrial partnerships and supporting students like Ruchi, please contact Kathy Cotter, director of development, 617-373-2637.
**COUNSELING AND APPLIED PSYCHOLOGY**

Christina Lee creates new teaching approach to long-standing problem

To promote and advance the standards of clinical practice in treating patients with addictions, Christina Lee, PhD, assistant professor in the Department of Applied Psychology, has developed a class in which she not only teaches evidence-based counseling techniques, but also provides students the opportunity to practice their skills using simulations. Working with Dr. Jamie Musler, director of the Arnold S. Goldstein Simulation Labs, Lee has developed simulations that allow students essential opportunities to practice evidence-based assessment and intervention approaches and motivational interviewing strategies and skills in a real-world environment of patients suffering from drug addiction. In this instance, the patients are actors and the counseling sessions take place in a lifelike environment created in one of the simulation labs. Each counseling session is followed by a debriefing session, allowing the student and Lee to view the videotaped simulation and reflect on what worked well and other scenarios that could also be effective.

**INTERDISCIPLINARY PROGRAMS**

Jean McGuire speaks at White House in September

Jean McGuire, PhD, professor of practice in the Department of Health Sciences, spoke at the White House in September on the 25th anniversary of the signing of the Ryan White Comprehensive AIDS Resources Emergency (CARE) Act. Her invitation to this event acknowledged her pioneering work in HIV awareness during President George H.W. Bush’s administration, when the CARE Act was signed into law in August 1990. As the executive director of the AIDS Action Council at that time, McGuire built a diverse political coalition that helped push Congress to pass this landmark legislation. McGuire commented, “[The CARE Act] has saved many lives and built a care-delivery infrastructure and clinical capacity that has endured.” The invitation-only event brought many other advocates and lawmakers together as well, including former U.S. Representative Henry Waxman, the act’s lead author. The CARE Act is named for an Indiana teenager who was diagnosed with AIDS following a blood transfusion and who died four months after Congress enacted the legislation.

Maria Dolce receives national grant to advance work in interprofessional practice

Maria C. Dolce, PhD, RN, CNE, FACHE, associate professor in the School of Nursing, in partnership with the Harvard School of Dental Medicine, has received a $1.2 million award from the Health Resources and Services Administration, an agency of the U.S. Department of Health and Human Services. Provided under the Nurse Education, Practice, Quality and Retention (NEPQR) program for Interprofessional Collaborative Practice (IPCP), the three-year funding will support the creation of IPCP environments in which professionals in nursing and other disciplines work together to provide comprehensive healthcare services for patients and their families. This award will also enable the demonstration of the Nurse Practitioner-Dentist (NPD) Model for Primary Care, developed by Dolce, and how it can mitigate chronic health conditions, particularly for older adults and other vulnerable populations. A replicable IPCP model that integrates
At the heart of research conducted in the Laboratory for Movement Neuroscience, run by Associate Professor Gene Tunik, PhD, PT’97, one can better understand how actions are organized by the brain. Key questions include: How are movements represented in the brain? How do these representations get deployed into complex and precisely timed movements across hundreds of muscles and joints? How does the nervous system integrate sensory and motor information to coordinate movement? How do motor representations in the brain get sculpted with practice, and what happens when we cease to practice or have a neurological disorder such as a stroke, autism, or Parkinson’s disease? Finally, how can we apply principles from the neural basis of movement to develop meaningful therapy options for individuals who have difficulty performing actions? The federally funded lab uses tools from many disciplines—including noninvasive brain stimulation, neuroimaging, electromyography, motion-capture, and virtual reality—to study human motor control, motor learning, and motor recovery in healthy individuals and patient-based paradigms.

Bouvé’s Department of Communication Sciences and Disorders celebrated 50 years of excellence in research and training in its core disciplines of speech-language pathology (SLP) and audiology. Founding chair Robert Ferullo launched the educational programs in 1965 as a division within Northeastern’s Department of Rehabilitation and Special Education, and in 1974 he oversaw its transition to a stand-alone department in accordance with the standards of the American Speech-Language-Hearing Association (ASHA). As the profession grew, the department offered master’s degrees in SLP and audiology in 1979, and an AuD in 2003. From the start, the Speech-Language and Hearing Center (SLHC) has offered low-cost clinical services to the Boston community. In 2003, SLHC moved to the Behrakis Health Sciences Center, where it continues to anchor students’ experiential learning. On the strength of the interdisciplinary Communication Research Laboratory founded by Matthews Distinguished Professor Mary Florentine in 1980, Bouvé has built a reputation for globally important research in this field. In honor of this milestone, a dinner was held at the Warren Conference Center and Inn on October 30.

Rachel Jones, PhD, RN, FAAN, as principal investigator, and funded by a four-year $2 million grant from the National Institute of Nursing Research (NINR) at the NIH, a randomized controlled trial will be conducted to evaluate the program’s effectiveness. The study will also compare differences based on enrollment through social media versus conventional recruitment methods. A previous online pilot study indicated that almost half of the women went for HIV testing within 30 days of viewing the series. Members of the research team include Elmer Freeman, MSW, executive director of the Center for Community Health Education Research and Service; Don Hoover, PhD, a biostatistician; Lorraine Lacroix, MPH, a project director; Catherine O’Connor, MSN, RN, ACRN, a clinical instructor; and a group of Northeastern information-technology specialists.

In recognition of the need for clinicians trained to provide medical care to an increasingly diverse and global population, the Northeastern University Physician Assistant Program has begun development of international clinical experiences. In spring 2015, PA students began rotating at Clínica Genesaret in San Lucas, Tolimán Guatemala. At this site, students deliver primary medical care to individuals in an underserved, rural Central American community. Without the aid of expensive laboratory and diagnostic studies, students learn to apply their history-taking and physical-exam skills to arrive at appropriate diagnoses and develop treatment plans under the supervision of local physicians. Students also gain experience with medical conditions and social determinants of health that are distinct from those encountered in most domestic rotations. Christie Smethurst, MS, PA-C, currently a
physician assistant at Boston Health Care for the Homeless Program (BHCHP), was the first NUPA student to complete this international rotation, and had this to say about her experience:

“Practicing medicine in another country, another culture, another language was a refining and inspiring privilege. Through demonstration, the clinical staff at Clinica Genesaret taught me much about compassion, resource stewardship, and joy in adversity. In the midst of the clinical year of PA school, arguably the most challenging year of my life, this experience proved to be the refreshment that I needed to remember what inspired me to pursue a career in medicine.”

Additional international sites planned for future development include South Africa, Southeast Asia, and the United Kingdom.

INTERDISCIPLINARY PROGRAMS
Alison Yoos, MPH ’11, has been awarded a fellowship in global program management from the Association of Schools and Programs of Public Health (ASPPH), joining the group of Allan Rosenfield Global Health Fellows of 2015. She will be based at the Atlanta office of the U.S. Centers for Disease Control, working in the Division of Global Health Protection’s Improving Public Health Management for Action (IMPACT) program, and traveling to implement, evaluate, and refine training courses with the CDC offices in Kenya and Bangladesh.

SCHOOL OF PHARMACY
Two student organizations have received recognition for excellence and service. The Alpha Rho chapter of the professional pharmacy fraternity Lambda Kappa Sigma was named the 2015 Northern New England Region Collegiate Chapter of the Year, an award for chapters that exemplify the fraternity’s core values of professionalism, leadership, and service. The Beta Chi chapter of the professional pharmacy fraternity Phi Delta Chi was awarded fourth place in the nation for the Emory W. Thurston Grand President’s Cup, which recognizes excellence in scholarship, leadership, and service. The chapter also came in second place for the leadership award, and in third place for the award for professional and service projects.

PHYSICIAN ASSISTANT
Maria Gargano, PA ’15, was awarded the Association of Physician Assistants in Oncology (APAO) scholarship, given to a student who plans a career in oncology. Part of the award can be used to attend the American Academy of Physician Assistants annual meeting or the APAO annual conference. Maria’s interest in oncology began during her undergraduate career and continued in her research and internship and, most recently, in a rotation at the Dana-Farber Cancer Institute. “Maria is exceptionally bright and capable, caring, and compassionate,” commented Dr. Robin Reed, clinical professor, Physician Assistant Program.
James Saunders and his deceased first wife, Lora, created a program funded by a charitable remainder trust that will support pharmacists through continuing education, an initiative in memory of the couple’s sons, John and David, both registered pharmacists. From his home in Florida, James described two sons who loved sports, were avid outdoorsmen, and were devoted to their pharmacy professions.

As a young child, John was diagnosed with a rare immune system and blood disorder. He struggled at times, and was treated at Children’s Hospital Boston and the Dana-Farber Cancer Institute. Throughout all of this, John kept a positive attitude in the face of such adversity, his father said.

When looking at colleges, John wanted to attend a school where he could participate in a ski team, as he loved to ski. When he learned of Northeastern, he was also impressed by the pharmacy and co-op program, and decided to enroll. While John was at Northeastern, his older brother, David, transferred from the University of Kentucky to the Massachusetts College of Pharmacy, and they lived together in Boston—though almost four years apart in age, they were close friends.

Upon graduation, John returned to Lewiston, Maine, where he married Louise Bazinet, whom he had met while they were both working at a local pharmacy. Later they moved to Augusta, Maine, and then back to Lewiston, where John continued to practice. As an alumnus, John made it a point to attend pharmacy talks and lectures at Bouvé when he could. He was always interested in learning more about the industry and practice. His father said John deeply enjoyed the outdoors; He was an avid hunter and loved to be in the woods, and had continued to enjoy skiing and four-wheeling. He also joined the Masons and the Shriners.

Brother David was a sports enthusiast—he loved being a spectator, watched any and all sports, and knew a lot of sports trivia. He was a manager of the Massachusetts College of Pharmacy hockey team while attending school there, and he also was a golfer.

James described his sons as two young men who, early in their lives as professionals, built trusted relationships with customers and members of the communities in which they lived and worked. In his early thirties, John passed away from a brain hemorrhage due to his condition. Sadly, David died in a car accident just seven months later.

Because of their sons’ devotion to their professions and to giving back, James and Lora sought to honor them in a way that would have been meaningful to them. Thus, the couple established the John R. and David J. Saunders Memorial Fund to promote continuing education in pharmacy; a series of lecture topics will be created.

“Naming Northeastern as a beneficiary of our charitable remainder trust allows us to honor our sons while ensuring that future pharmacists and professionals have the opportunity to engage in continued learning in industry practices,” James shared.

For more information on this and other gift options, please contact the Office of Gift Planning at 617.373.2030 or giftplanning@neu.edu, or by visiting northeastern.edu/giftplanning.
Bouvé Faces

Carmen Scozza, Professor and Chair of the Department of Health Sciences speaks at the State of the University

Gordin, Angela and Kaitlin Bindert, PT’18 at the Bouvé Parent’s Reception

Boston Bouvé class of ’68 singing at the Physical Therapy Centennial Brunch

Boston Bouvé class of ’63 at the Physical Therapy Centennial Brunch on November 7th

Northeastern graduates tour the Arnold S. Goldstein Interprofessional Laboratory Suite while attending NU@Noon

Alumni and students celebrate the Kappa Psi Gamma Lambda Chapter Alumni Dinner

Katie, Joe P’70, MS71, Nancy P’71 and Chris Fleming at the HSE 10th Anniversary Celebration

Boston Bouvé class of ’63 at the Physical Therapy Centennial Brunch on November 7th

Carmen Scozza, Professor and Chair of the Department of Health Sciences speaks at the State of the University

John, Regina PT’20, John PNT’20 and Claudia PNT’20 DeGeorge with Dr. Maura Iversen

Vadim Molla, BHS’16 at Nanomedicine Day

John, Regina PT’20, John PNT’20 and Claudia PNT’20 DeGeorge with Dr. Maura Iversen
Many students who suffer from mental health conditions are never identified. In fact, the U.S. surgeon general estimates that the majority of affected students do not receive treatment that could prevent a host of serious negative repercussions. Over the last decade, the U.S. Department of Mental Health and Human Services, the Institute of Medicine, and the President’s New Freedom Commission on Mental Health have all called for schools to expand their methods of early detection of students with mental health conditions in order to address the issue of under-identification.

Approximately one in five schoolchildren struggle with a mental health condition that requires treatment. In addition to affecting these students’ day-to-day functioning in classrooms, mental health problems in childhood are associated with a host of negative outcomes later in life, including truancy, poor peer relations, underemployment, and an increased risk for drug abuse and suicide. Although population-based screenings are fairly commonplace in medicine for the early detection of various types of cancers and cardiovascular disease, the call to expand mental health screening in school settings has been controversial, with many groups pushing back. Some reasons for this include the potential overmedication of children and the stigma associated with mental illness.

Given that over 50 million children and adolescents attend public schools in the U.S., schools could serve as excellent settings in which to conduct screenings for a variety of conditions. Many states across the country, including Massachusetts, already mandate that screenings occur for vision and hearing impairments as well as other health concerns (e.g., postural concerns, elevated BMI). Although the need for universal screening for mental health conditions is urgent, only about five percent of schools conduct such assessments.

We feel that public concerns about the stigma associated with the provision of preventive and targeted interventions for mental health conditions are overstated (Rapee et al., 2006), and that the proven benefits of universal screening in obtaining services for children in need should not be overlooked (e.g., Greif Green et al., 2013). Just as it is important to obtain regular checkups to prevent serious illnesses and the negative outcomes associated with them, it is critical to regularly screen for mental health conditions in children and youth.

Our own work here in the Boston area (e.g., Daniels, Volpe, Briesch, and Fabiano, 2014) involves the development of a universal screening system that requires very little time—five to ten minutes per classroom. At the same time, we have been supporting the Boston Public Schools, which has been on the forefront of national efforts to identify and provide preventive services for children at risk for mental health conditions. We are advocating for a policy of universal screening for mental health conditions that would mirror the screening for physical health conditions in schoolchildren in Massachusetts.

Once at-risk students are identified, it is also essential to monitor their response to evidence-based interventions to support their school functioning. Through our four-year, $1.6 million grant from the U.S. Department of Education, we are developing a web-based system for elementary school teachers to easily track the progress of children in their classrooms who have been identified as being at risk for emotional or behavior disorders. Our system will be used to guide treatment efforts by allowing school staff to efficiently monitor student progress across a range of behaviors that enable academic success, such as study skills, interpersonal skills, motivation, and social engagement.

ROBERT J. VOLPE, PhD, and AMY M. BRIESCH, PhD are associate professors in the Department of Applied Psychology and are Co-Directors of the Center for Research in School-Based Prevention (www.neu.edu/crisp).
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or contact Kathleen Cotter, Associate Dean and Director of Development, Bouvé College of Health Sciences, at k.cotter@neu.edu or 617-373-2637.