From the Director, Anirban Basu  
August 2, 2017

The 2017 Annual Report has a special place in the twenty-one-year history of PORPP, for it is the very last report under this designation. After two years of conversations with our faculty, students, alumni, advisors and friends, and a full strategic planning process we have been approved for transitioning into an Institute status within the University. The formal launch of The Comparative Health Outcomes, Policy, and Economics (CHOICE) Institute will happen later this Fall. We thank our Chair, Steve White, and our Dean, Sean Sullivan for their unwavering support throughout the process.

An Institute designation will better reflect the breadth of work conducted by our faculty, students, and post-docs. It will promote the recognition of PORPP and become an international hub of excellence in the broader areas of health outcomes research, pharmacoepidemiology, health economics, and policy. This endeavor will also reinforce the crucial role of medications in shaping patient health and patient-centered health care delivery. In fact, the current PORPP faculty is already engaged in a range of activities that traverses these broader domains. Importantly, developing junior faculty into world-class researchers in focused areas is essential for training the next generation of scientists in our graduate program

The institute-level designation will also allow us to organize research and training activities and resources into focused Programs to enhance our competitiveness and expand our leadership in the field. Key programmatic areas that have been identified to date include health economics, policy analysis/big data science, individualized care, drug and vaccine safety, and global medicines issues. For example, one such existing program is the Program on Health Economics and Outcomes Methodology (PHEnOM). PHEnOM aims to facilitate intellectual activities within the department in the fields of health economics, econometrics and methodology development in outcomes research and to engage researchers in allied fields around the city of Seattle. PHEnOM is a joint program with the Department of Health Services. Also, the Global Medicines Program will transition to the Institute while maintaining a strong academic linkage with the Department of Global Health. The mission of the Global Medicines Program, is to improve the use, safety, quality, risk-benefit profile, cost-effectiveness, and affordability of medicines in low and middle-income countries. Directed by Andy Stergachis, the Program conducts field-based research, pre-service and in-service education and training, and capacity-strengthening technical assistance in a variety of low- and middle-income countries.

The Institute will be an integral part of the Department of Pharmacy and the School of Pharmacy. We believe our focused research programs will facilitate interactions with clinical faculty in the Department and the School of Pharmacy.

Our usual bouts of excellence, nevertheless, continues. This annual report highlights some of those accomplishments and special moments. For this coming year, we are admitting another strong new graduate program cohort. The admissions committee has recruited our top candidates, who are profiled here. Our Distance Learning Certificate in Health Economics and Outcomes Research will welcome another large batch of students this fall. We have now trained over 300 students through this mechanism.

This past year we opened a faculty search, led by Dave Veenstra, for a Research Assistant Professor position with a focus on Health Economics and Policy. Also, we congratulate Lou Garrison for his leadership as the President of ISPOR last year. He will continue to be a resource and mentor for the incoming ISPOR President, and one of our alumni, Shelby Reed.

Finally, as many of you know Penny Evans, our long-time Graduate Program Advisor, retired this year. We will be ever thankful for her contributions to the program and her dedication to our students. In recognition, we have renamed the UW ISPOR Student Chapter Fund as the Penny Evans UW ISPOR Student Chapter Support Fund. We also welcome our new Graduate Program Advisor/Program Operations Specialist, Michelle Hughes, who has seamlessly transitioned into her new role with excellent training from Penny. I also want to thank Paul Kraegel, our other Program Operations Specialist, for the excellent support he provides to our program.

We remain grateful to PORPP’s founding members, alumni and corporate advisors, whose continued support is instrumental to our success. I thank all of our past and present Corporate Advisory Board members for their continued support to the program. We cherish their engagement with the program, and in the future with the Institute.

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In the spring 2017 PORPP alumni newsletter, Director Anirban Basu announced the establishment of The Penny Evans UW International Society for Pharmacoeconomics and Outcomes Research (ISPOR) Student Chapter Support Fund.

This fund, named in honor of our highly-esteemed, award-winning program administrator, Penny Evans, will support student activities for our ISPOR chapter.

Penny retired in June 2017, but her influence and excellence remain forever imprinted on our program—and is now encapsulated in this fund.

The students and alumni of the PORPP program know first hand how important Penny has been to the growth and excellence of this globally-renowned program.

“As we enter a new chapter in our evolution as a program,” says Anirban, “I hope you will consider a gift to The Penny Evans ISPOR Student Chapter Support Fund and lead the way in fostering the exceptional talent and innovation of our students.”

For more information on how to donate, please visit: Bit.ly/PennyFund

A Warm Welcome to PORPP’s Newest Staff Member

As of March, Michelle Hughes is now the program operations specialist and graduate program advisor. Over the past few months, she has worked closely with Penny Evans to make this transition as seamless as possible for faculty and students. Michelle started with the department of pharmacy 1 year ago and is excited to work with PORPP’s students, post-docs and faculty in the upcoming academic year. Before starting at the UW, Michelle completed a year of service with AmeriCorps in Federal Way, WA.

Her hobbies include cooking, participating in local cooking classes, volunteering at community farm to table operations, backpacking, hiking and being outdoors.

Stop by the department and say hi to Michelle!
Master of Science in Pharmacy Degrees

Laura Hart, PharmD, MS
Thesis: “Evaluating the Association Between Central Nervous System (CNS)-Active Medications and Falls in Older Adults with Dementia”
Advisor: Zachary Marcum, PharmD, PhD

Harry Lee, PharmD, MS
Thesis: “Cost-Effectiveness of Pembrolizumab for Advanced NSCLC with Performance Based Risk Sharing Agreements”
Advisor: David Veenstra, PharmD, PhD

Michael Serbin, PharmD, MS
Advisor: Beth Devine, PharmD, MBA, PhD

Sheila Shapouri, PharmD, MS
Thesis: “Predicting Hospitalizations Post-Discharge Among Patients with Acute Bacterial Skin and Skin Structure Infections (ABSSSIs)”
Advisor: Beth Devine, PharmD, MBA, PhD

Lucille Sun, PharmD, MS
Thesis: “Risk of Depressive or Anxiety Disorders in Commerically Insured Patients with Non-Hodgkin Lymphoma in the US: A Retrospective Analysis”
Advisor: Josh Carlson, MPH, PhD

Doctor of Philosophy in Pharmacy Degrees

Solomon Lubinga, MSc, PhD
Advisor: Anirban Basu and Joseph Babigumira

Elisabeth Vodicka, MHA, PhD
Dissertation: “Cervical Cancer in Low-Income Settings: Costs and Cost-Effectiveness of Screening and Treatment”
Advisors: Joseph Babigumira and Brian Bresnahan

NEW ALUMNI
CLASS OF 2017
Samantha Clark, MS, PhD Student
Samantha joins PORPP from the International Vaccine Access Center at Johns Hopkins where she worked as a health economist conducting economic and health outcomes research. Her projects focused on the development of decision-analytic models to assess the impact of immunization from a variety of stakeholder perspectives. She received her master’s degree in health economics from the Johns Hopkins Bloomberg School of Public Health in 2013 and her bachelor’s in economics from St. Mary’s College of Maryland in 2008. Her research interests include heath economics, decision sciences, healthcare disparities, and methods in comparative effectiveness research. Samantha is excited for the opportunity to continue to learn advanced research and modeling techniques from PORPP faculty. Her research interests include: health economics, decision sciences, healthcare disparities and comparative effectiveness research.

Karen (He) Guo, MSc, MPP, PhD Student
Karen recently received her Master of Public Policy (MPP) degree from The University of Chicago. Prior to UChicago, she has been working in the HEOR and market access at Johnson & Johnson and IMS Health for five years after she received the Msc. in International Health Policy (Health Economics track) at The London School of Economics in 2010. She has experienced and managed a broad range of project types, including health economic modeling, market access value dossiers, product launches, reimbursement, pricing strategy, competitors’ landscape, and systematic literature review. In addition, Karen has worked as an analyst in World Health Organization based in Geneva, focusing on vaccine strategy and health financing projects. Her research interests include cost effectiveness analysis; health policy; health service evaluation and outcomes research. She is excited to join the PORPP family.

Lauren Chin, PharmD, UW/Bayer Post-Doctoral Fellow 2017-2019
Lauren received her PharmD from the University of Washington, School of Pharmacy in 2017 and a BS in Biological Sciences from the University of Southern California in 2012. Her interests include economic modeling, comparative effectiveness research, formulary management, and statistical analyses. During her time in pharmacy school, Lauren assisted Dr. Beth Devine with research projects regarding the clinical use of pharmacogenomic (PGx) biomarker testing and PGx evidence provided in FDA drug labels. She competed in AMCP’s P&T competition for three consecutive years, and as a third year, her team was selected to compete nationally. As a fourth year, Lauren completed an 8-week externship in Allergan’s Global Health Economics and Outcomes Research department. At Allergan, she developed an economic model with sensitivity analyses to estimate the economically justifiable price of a novel intervention, conducted a targeted literature review, and completed additional projects involving patient- and clinician-reported outcomes to inform internal discussions.

Sara Higa, MS, PharmD, UW/Allergan Post-Doctoral Fellow 2017-2019
Sara received her PharmD from the University of Maryland Baltimore and her BS and MS degrees from Georgetown University. Before joining PORPP, she worked with faculty on various research projects ranging from qualitative case studies to retrospective claims database analyses. Her involvement in the Pharmaceutical Health Services Research Department at the University of Maryland was instrumental in fostering her passion and experience in outcomes research. She is excited to work with the PORPP and Allergan teams to learn more about the utility of health economics and outcomes research. Her research interests include health economics, policy, comparative effectiveness, and patient-centered outcomes.

Karen recently received her Master of Public Policy (MPP) degree from The University of Chicago. Prior to UChicago, she has been working in the HEOR and market access at Johnson & Johnson and IMS Health for five years after she received the Msc. in International Health Policy (Health Economics track) at The London School of Economics in 2010. She has experienced and managed a broad range of project types, including health economic modeling, market access value dossiers, product launches, reimbursement, pricing strategy, competitors’ landscape, and systematic literature review. In addition, Karen has worked as an analyst in World Health Organization based in Geneva, focusing on vaccine strategy and health financing projects. Her research interests include cost effectiveness analysis; health policy; health service evaluation and outcomes research. She is excited to join the PORPP family.

Chiemeka Ike, MPH, PharmD, UW/Allergan Post-Doctoral Fellow 2017-2019
Chiemeka received her PharmD degree from the University of Houston College of Pharmacy in 2017. Her interest in the pharmaceutical industry propelled her to start an Industry Pharmacists Organization (IPhO) chapter at the University of Houston to create awareness and spark interest among pharmacy students. HEOR sparked her interest particularly because she wanted to combine her PharmD and epidemiology background in a pharmaceutical industry career focused on health outcomes. Chiemeka completed clinical clerkships in managed care, cardiology, and at the U.S. Food and Drug Administration (FDA) Department of Pediatric Clinical Pharmacology. Prior to pharmacy school, she worked in clinical guideline development at the American Society for Radiation Oncology (ASTRO). In addition, she obtained a Master of Public Health in Epidemiology at the George Washington Milken Institute School of Public Health. Her research interests include infectious disease and oncology.

Tricia Rodriguez, MPH, PhD Student
Tricia joins PORPP from the University of Washington’s Department of Global Health, in the Health Metrics and Evaluation program. During her MPH, Tricia’s thesis work focused on the cost-effectiveness of palliative care for women with breast cancer in Uganda. She also served as a research assistant at i-TECH, where she evaluated the impact of ART prescribing interval length on retention and viral suppression for patients with HIV in Haiti. Prior to her MPH, Tricia was a senior consultant at a management consulting firm, where she worked with payers on impact and strategy related to the Affordable Care Act, particularly risk adjustment in commercial markets. Tricia received a B.S. in economics from DePaul University. She is interested in research in the economics of end-of-life and palliative care.

Enrique Saldarriaga, MS, PhD Student
Enrique studied economics and epidemiology in Peru. For the last four years he has been working on health economics research. In the last year he started to work on public policy and public management projects. Currently he is working at the Ministry of Health in Peru, developing a tool for monitoring facilities resources and productivity management, with the objective to improve the quality of the healthcare provision. His final objective is to improve the Developing countries’ health system through better decision making processes, based on scientific data. His research interests include economic evaluation to improve policy making processes, public resource management in the health sector and reducing access barriers to health care.
The 2017 PORPP Retreat focused on the themes of diversity, equity and inclusion. Anu Taranath, PhD, Department of English, UW, led the group through a workshop focusing on diversity, equity and inclusion. Her engaging presentation and approach helped everyone in the room reflect on what PORPP is doing well and what the program can improve upon moving forward. She asked insightful questions and pushed for meaningful, honest discussion among the students, faculty and staff.

**Action items identified through collaborative discussion between faculty and students:**

- Have students identify faculty research areas within the first year and begin working with them as soon as possible
- Establish a clear process for TA and RA opportunities as they become available
- Prepare students for the transition from the second year to the third year, especially when it comes to funding
- Create an Alumni group on LinkedIn for networking and job openings
- Hold regular student and faculty lunches as a way to connect everyone in the program and learn about new opportunities, research areas and to build stronger, lasting relationships.

After the retreat, PORPP students, post-docs, faculty, staff, family (and 4-legged friends!) came to celebrate! Los Chilangos taco truck served up some tasty grub throughout the night.
CURRENT GRADUATE STUDENTS AND FELLOWS

Blythe Adamson, MPH; PhD Candidate
Blythe continues her dissertation research on implementation strategies for HIV treatment and prevention. In August, she travels as a U.S. delegate to the Lindau Nobel Laureate Meeting in Germany where she will present her findings to 19 Nobel Prize winners in Economics. After serving as President of the UW ISPOR Student Chapter, she was selected by the ISPOR Presidents at other universities to lead as the ISPOR Student Network Chair in 2017-2018. In collaboration with a UW bioengineering lab, Blythe submitted a provisional patent application for a diagnostic platform technology that received several awards for innovation.

Mark Bounthavong, PharmD, MS; PhD Candidate
Mark Bounthavong will be a fifth-year PhD candidate in PORPP who also works as the national data program manager for the Department of Veterans Affairs (VA) National Academic Detailing Service. His dissertation evaluates the impact of academic detailing on naloxone prescribing and explores the facilitators and barriers to the adoption of key messages associated with Opioid Overdose Education and Naloxone Distribution. He received his PharmD from Western University of Health Sciences and his MPH from Emory University. Prior to his doctoral studies, Mark worked as a pharmacoeconomist at the VA San Diego Healthcare System.

Elizabeth “Lizzy” Brouwer, MPH; PhD Student
Elizabeth spent her second year in PORPP completing core program coursework, acting as Secretary for the UW ISPOR Student Chapter, and passing her final preliminary exams. Since June 2016, she worked as a Research Assistant on the ICER grant with Dr. Josh Carlson, supporting models for Multiple Sclerosis, Atopic Dermatitis, and Multiple Myeloma medications and presenting a poster on MS medication adherence at the 2017 Annual ISPOR meeting in Boston. Elizabeth wrapped up a consulting project in January 2017 with RTI International and the World Health Organization assessing return on investment for policies addressing non-communicable diseases in Mongolia. During the Spring of 2017, Elizabeth completed an internship at PATH regarding the costs of self-injectable contraceptive technology in three sub-Saharan Africa countries. This summer, Elizabeth will work with PORPP alumnus, Dr. Kai Yeung, at the Kaiser Permanente Research Institute on trends in value-based insurance formularies, as well as continuing her work on the ICER grant. She will spend her third year working on her short proposal, which will explore opportunities to integrate cost-effectiveness analysis and decision-making analysis in US health policy.

Shuxian Chen MA; PhD Student
Shuxian is entering her second year in the PhD program in PORPP. During the first year, she has finished part of the coursework, while also working with Professor Josh Carlson as an RA on performance-based risk-sharing (PBRS) arrangements and updating the database. In the second year, she will complete her coursework and at the same time work with several faculty on the Health Tech Project with a focus on developing and applying novel real-world data methods.

Devender Dhanda, BSPharm, MS; PhD Candidate
Devender will be entering his fifth year of the PhD program in PORPP. During his fourth year, Devender completed his course-work requirements and worked with Dr. Dave Veenstra on the Personalized Medicine Economics Research (PriMER) grant. Devender recently presented his work at the International Health Economics Association meeting (IHEA) at Boston. His work on evidence comparison between the pharmacogenomics-based and clinical-based decisions for warfarin dosing was published in Clinical Pharmacology and Therapeutics. Devender recently passed his general exam for PhD candidacy and is working on his dissertation “Innovation, Value, and Uncertainty in Oncology Precision Medicine”.

Horacio Duarte, MD; MS Student
Horacio is entering his 3rd year as a master’s degree student in PORPP and is an acting instructor in pediatric infectious diseases at the University of Washington/Seattle Children’s Hospital. Horacio earned a B.A. in biological anthropology from Harvard College, an M.D. from the University of Texas Medical School at Houston, and he completed his pediatrics residency and pediatric infectious diseases fellowship at Seattle Children’s Hospital. He is interested in economic evaluation of global health programs, with a special interest in HIV and child health. Currently, Horacio is studying the cost-effectiveness of HIV drug resistance testing in Kenya. Research interests include cost-effectiveness analysis, infectious disease modeling, global health, HIV, and children’s health.

Simrun “Simi” Grewal, MHS; PhD Student
During her third year in the PhD program, Simi enjoyed working with Dr. Josh Carlson and colleagues on the Personalized Medicine Economics Research (PriMER) project. As an RA on PriMER, she has assisted on developing a decision analysis tool to explore preferences for genetic testing from different stakeholder perspectives. The team’s work has been accepted for a poster presentation at the Society for Medical Decision Making (SMDM) conference in October. Additionally, Simi has provided research support to two key initiatives led by the International Society for Pharmacoeconomics and Outcomes Research (ISPOR) on Vaccine Economic Evaluation and Value Assessment Frameworks. Entering her fourth year, Simi is excited to continue learning in her research roles while exploring the next stages of her dissertation proposal.

Shalak Gunjal, MS; PhD Student
Shalak is entering the second year of his PhD program. During the past year, he worked as a teaching associate for the Biomedical Regulatory Affairs program. Additionally, he provided research support and co-authored two evidence reports led by the AHRQ - Mayo Clinic Evidence-Based Practice Center on the clinical utility of fractional exhaled nitric oxide in asthma management and comparative effectiveness and safety of treatments for childhood anxiety disorders. Currently, he is the Global Product Strategy Intern in the Global Pricing & Market Access Oncology division at Genentech working on personalized reimbursement model-enabled combination price assessment for third line colorectal cancer and multiple myeloma treatments across key EU markets. During his second year, Shalak plans on completing the core coursework and commence on identifying his dissertation research.
CURRENT GRADUATE STUDENTS AND FELLOWS, CONT.

Nathaniel Hendrix, PharmD; PhD Student
Nathaniel is entering his third year in PORPP's PhD program. During the past year, he finished his coursework, having especially enjoyed classes in data science and econometrics. In the fall, he worked with PORPP Professor David Veenstra on a cost-effectiveness model for immunomodulators for treatment of psoriasis. They and their collaborators at the Institute for Clinical and Economic Review reported on their work at the ISPOR General Meeting in Boston. Over the winter and spring, he has worked with Associate Professor Josh Carlson to determine how value of information analyses could be used during the grant review process of a major cancer consortium. In the coming year, he intends to explore his interests in the economic and clinical impacts of machine learning in the first stages of his dissertation.

Erik Landaas, MPH; PhD Student
Erik is entering the second year of his PhD program. Erik completed his MPH from the UW, and before coming to PORPP, he was working in Hawaii as the Chief of Outcomes and Compliance at the Department of Health. During the past year, he has completed a portion of his coursework and developed more sophisticated scientific methods skills. He began working with UWMC’s Office of the Medical Director and Dean Sullivan on UWMC’s Smart Innovation—a hospital-based health technology assessment program. UWMC is utilizing Erik’s evidence criteria model from a paper he recently published to determine coverage for new and emerging medical technologies for WA State public payers. Erik plans on assisting in the implementation and lead an evaluation of the Smart Innovation Program.

Harry Lee, PharmD, MS
Harry received his PharmD degree from the University of Washington in 2016, and completed his master of science in pharmaceutical outcomes and health policy this year. His graduate thesis was focused on the use of performance-based risk sharing arrangements in a case study of first line pembrolizumab therapy for advanced non-small cell lung cancer. He hopes to continue his work in this area to promote the use and evaluation of novel pricing and reimbursement schemes so patients may receive timely and consistent access to care and achieve optimal health outcomes.

Meng Li, ScM; PhD Student
Meng is entering her fifth year in the PhD program. During the past year, she has been working on her dissertation, which is examining the real options value of life and innovation. She has also been working with several faculty members on a number of research projects, including establishing a framework for examining the value of information of heart failure clinical trials, validating a new instrument that measures the psychological impact associated with genetic testing, examining the utilization patterns of opioid in Washington State, and, examining the acceptability and performance of using visual inspection for cervical cancer screening in resource-limited settings.

Solomon J Lubinga, BPharm, MSc, PhD
Solomon just completed his PhD in PORPP as of August 2017. He is interested in the application of decision theories from economics and psychology to individual decision-making for preventative health care. His Dissertation examined the economic and psychological factors influencing the demand for medical male circumcision for HIV prevention. As a postdoctoral fellow, Solomon will be mentored by Dr. Ryan Hansen.

Michael Serbin, PharmD; UW/Allergan Post-Doctoral Fellow 2016-2018
Michael received his PharmD degree from the University of Washington School of Pharmacy in 2016. He was a technical engineering fellow from the University of Southern California in 2011. At UWSOP he worked as a research assistant for Dr. Veenstra. In his first year as a UW/Allergan Fellow Michael worked with the GHEOR eye care team at Allergan to develop a thesis titled “Assessing the Societal Burden of Glaucoma Patients With vs. Without Physical or Mental Comorbidities” which he will be submitting for publication as soon as he can. This year Michael is excited to start working in Irvine, California at the Allergan offices as he transitions out of life in a classroom.

Sheila Shapouri, PharmD; UW/Allergan Post-Doctoral Fellow 2016-2018
Sheila is entering her 2nd year of the UW/Allergan fellowship. Prior to the fellowship she received her PharmD from the University of Washington in 2016. Over the past year, Sheila has been taking coursework and working on her master's thesis model for “Predicting Hospitalizations Post-Emergency Department Discharge Among Patients with Acute Bacterial Skin and Skin Structure Infections (ABSSSIs).” She also presented a poster at the ISPOR 22nd Annual International Meeting entitled "Cost-Utility Analysis of Outpatient Dabivancin for ABSSSIs versus Inpatient Vancomycin." Sheila is looking forward to continuing her research and working on-site in the infectious disease therapeutic area with the Global Health Economics and Outcomes Research team at Allergan.

Kangho Suh, PharmD, MS; PhD Student
Kangho is entering his fourth year in the PhD program in PORPP. In the past year he was working as a RA for Dr. Anirban Basu on a project with Kaiser Permanente using comparative effectiveness methods (instrumental variables and propensity score matching) to compare bariatric surgical procedures. He will continue in this role this upcoming year. Kangho also worked with Dr. Aasthaa Bansal on an independent study assessing adherence to and effectiveness of surveillance tests after surgery for colorectal cancer patients. Kangho plans on finalizing a dissertation topic and advancing through the process in the upcoming year.
CURRENT GRADUATE STUDENTS AND FELLOWS, CONT.

Lauren Strand, MS; PhD Student
Lauren is entering her second year in the program. Over the past year, she has completed coursework, written two preliminary exams, and built her first cost-effectiveness model in clinically isolated syndrome with guidance from Drs. Josh Carlson, Ryan Hansen, and Marita Zimmernann. She presented this work at the ISPOR conference in her hometown of Boston, where she was a research poster presentation finalist. In the coming year, she will finalize several manuscripts (including her master’s thesis on statin use and left ventricular structural remodeling), serve as an RA for Ryan Hansen, write two more preliminary exams, and explore potential dissertation topics in neurology and/or substance use.

Elisabeth Vodicka, MPH; PhD Candidate
Elisabeth recently finished her 4th year in PORPP. Last year focused on continuing her dissertation work on cervical cancer/health services integration in Kenya and Uganda under the mentorship of her chair (Joseph Babigumira) and committee members (Michael Chung, Lou Garrison and Andy Stergachis). Along with colleagues Will Canestaro, Don Downing, and James Trussell (Princeton University), Elisabeth published an op-ed in the Seattle Times related to their economic analysis of employer-mandated contraception coverage in the U.S. She continued collaborating with researchers at Universidad Peruana Cayetano Heredia in Peru to assess the potential for private pharmacies to offer point-of-care screening for non-communicable diseases.

Wei-Jhih Wang, MS; PhD Student
Wei-Jhih is entering her third year in PORPP, and completed the required coursework. Last year, she worked with Dr. Carrie Bennette and completed data management for several public data sources to explore the relationship between characteristics of geographic area and clinical trials. Her independent study is working with Dr. Anirban Basu on the topic of seizure after stroke, and developing a new method for meta analyzing count data over varying duration which is nominated for ISPOR research poster presentation award. This summer, she will continue to work on a value of information project as a research assistant, and she is also working with Dr. Aasthaa Bansal for a project on machine learning.

Lucille Sun, PharmD, UW/Bayer Post-Doctoral Fellow 2016-2018
Lucille joins the Bayer US Health Economics & Outcomes Research (HEOR) team for the second year of her fellowship with the University of Washington (UW) and Bayer. As a first-year, she completed her Master’s coursework and thesis, a retrospective claims database analysis on the incidence of depressive and anxiety disorders in commercially insured patients with non-Hodgkin lymphoma (NHL) in the US. She also developed a partition state survival model to assess the cost-utility of first-line treatments in follicular lymphoma. Prior to attending UW, she received her PharmD from the University of California at San Francisco (UCSF), where she led the student chapter of the Academy of Managed Care Pharmacy (AMCP). She previously interned at Genentech’s HEOR department, conducting retrospective database analyses in orphan diseases. She further took on a role in Genentech’s Global Pricing & Market Access group, developing materials to support affiliate negotiations with payers for launch of Cotellic in metastatic melanoma. Lucille looks forward to applying methods and concepts from PORPP to value evidence generation and health technology assessment, as well as building a diverse array of experiences at Bayer.
The UWSOP Graduate Student Leadership Award honors graduate students who have demonstrated outstanding leadership and service and have had a positive impact on the School of Pharmacy, UW, the Northwest community, scientific and/or professional community. This year, the award goes to three students: Mark Bounthavong, Ryan Seguin, and Elijah Weber.

Mark Bounthavong, PharmD, MPH, is a PhD student in the Pharmaceutical Outcomes, Research and Policy Program (PORPP) in the UWSOP’s Department of Pharmacy. He recently completed service as President of the UW Student Chapter of the International Society for Pharmacoeconomics and Outcomes Research (ISPOR). His doctoral dissertation chair, Associate Professor Beth Devine, PhD, PharmD, MBA and Director, Graduate Program, PORPP, writes, “Mark’s intellect, inquisitive nature, drive, genuine personal warmth, fundamental desire to help others and, of course, leadership skills are reasons that will make us all proud to have him as recipient of this award.” Dave Veenstra, PharmD, PhD, Professor and Associate Director of PORPP writes, “As a PORPP student, Mark serves as a role model for other students.”

Mark’s work with the National Academic Detailing Program in mental health illness demonstrates a strong commitment to caring for Veterans. Mark will receive his award at the Welcome Back Graduate Program Reception on October, 16th 2017.

Certificate in Health Economics and Outcomes Research

The Certificate in Health Economics and Outcomes Research program is entering its 6th year. Launched at the start of the 2012-2013 academic year in conjunction with the UW Professional and Continuing Education program, this distance learning program is designed for professionals working in health care settings including payer organizations, health insurance industry, government, the life sciences, pharmaceutical and biomedical industries, and for professionals working within Health Technology Assessment or reimbursement organizations. The program offers one course per academic quarter; Fall quarter: Principles of Health Economics, taught by Lou Garrison and Anirban Basu; Winter quarter: Economic Evaluation, taught by Dave Veenstra and Josh Carlson; Spring quarter: Practice of HTA in a Global Environment, taught by Sean Sullivan and Beth Devine. During the program, students learn the key economic concepts and analytical tools of human economic behavior, explore the current state-of-the-art in the economic evaluation of health care technologies, and are introduced to the principles and methods of HTA practice. Students work in groups throughout the program on a capstone project, which applies their learning to an assigned country. Student evaluations have remained positive over the years. Many of the students are international, a testament to the program’s global reach. Applications have routinely been 60+ since the beginning of the program. The 2017-2018 program is on target to reach similar numbers. The program now has an active LinkedIn alumni group. Courses are continually being updated and revised to keep pace with changing technologies and economies. Revenues from the Certificate in Health Economics and Outcomes Research program support 1-2 PORPP teaching assistant positions each year.

https://www.pce.uw.edu/certificates/health-economics-and-outcomes-research
Beth Devine and John Gore are the Assistant Directors and site principal investigators of the AHRQ-funded Pacific Northwest Evidence-based Practice Center (PNW EPC) who, along with Paul Kraegel, UW EPC Program Manager, coordinate EPC projects across the three partner institutions: Oregon Health & Science University, the University of Washington CHASE Alliance, and Spectrum Research (Tacoma, WA). The UW joined the EPC program in 2013, and, to date has participated in fifteen projects ranging in scope from imaging for hepatocellular cancer to pharmacologic and non-pharmacologic treatments for schizophrenia. A current project that synthesizes the existing literature on the use of telehealth modalities for acute and chronic consultation is also incorporating the use of decision modeling to estimate the outcomes of specific telehealth interventions. Combining evidence synthesis with decision modeling is a new undertaking for AHRQ in their EPC V program and, with modeling expertise from PORPP faculty member Ryan Hansen, the PNW EPC was awarded the first of these contracts. A pending application involves decision modeling for lung cancer. PORPP faculty member, Josh Roth, will lead. Numerous additional PORPP faculty have led and participated in EPC projects. These include Joseph Babigumira, Josh Carlson, Laurie Gold, Ryan Hansen, Scott Ramsey, Sean Sullivan, and numerous colleagues from the UW Schools of Medicine and Public Health.

SCHOOL OF PHARMACY
UNIVERSITY OF WASHINGTON
Alice Ellyson, PhD
Alice started as the Pfizer Postdoctoral Fellow in August 2016 after receiving a PhD in Economics from Florida State University. Since joining PORPP, she has expanded her work in physician decision-making including a collaboration with Jevay Grooms and Alberto Ortega, Assistant Professor at Whitman College, on opioid prescribing and prescription drug monitoring programs. This supplements her existing work on medical malpractice and physician choices, including a $35,000 grant awarded by the Gus. A Stavros Center and work with Justin Robertson entitled, "Can malpractice pressure compel a physician to relocate?" In addition, Alice has investigated issues in pharmaceutical pricing, including insulin price increases and oral chemotherapy parity law effects with Anirban Basu. In the summer of 2017, she spent time in New York City at Pfizer Inc. working with mentor Cristina Masseria on the economic burden of undiagnosed nonvalvular atrial fibrillation.

Jevay Grooms, PhD
Grooms’ research focuses broadly on factors which impede the effectiveness of various health policies as they relate to underrepresented communities. Some of her current research focuses on domestic health policies and interventions geared toward individuals who suffer from substance use disorders and behavioral health conditions as well as Medicaid Expansion. This body of research includes opioid prescribing behavior of physicians, the effectiveness of prescription drug monitoring programs, the effect of a national opioid advisory, and access to treatment facilities for mental and behavioral health. This spring she was named a fellow in the NSF funded Diversity Initiative for Tenure in Economics. She also spent part of the summer as a Visiting Assistant Professor in the American Economic Association Summer Program at Michigan State University.

Melissa Rosen, PhD
Melissa received her PhD in Social Policy from Brandeis University in 2016. In addition, she holds Master of Public Health and Master of Science in Nutrition degrees from Tufts University. Her research has focused on Medicare Part D insurance plan switching behavior and associated health and spending outcomes among individuals with chronic mental and physical illnesses. Additional research interests include psychotropic medication access and adherence, policies and programs that affect Medicare-Medicaid dually eligible beneficiaries, and impacts of drug plan formularies and utilization controls on medication utilization, cost and health-related outcomes. As part of her fellowship, she worked on NIH funded research for Dr. Anirban Basu and Dr. Norma Coe including, their “Value of Information Methods for NHLBI Trials” and “Current and Future Costs of Alzheimer’s and Dementia Care” projects. Melissa Rosen has accepted a position as a Senior Health Economist at Fresenius Medical Care North America in Boston.

Marita Zimmermann, PhD
Marita Zimmermann is working on a UW project team with the Institute for Clinical and Economic Review (ICER). She recently completed cost-effectiveness models in multiple sclerosis and atopic dermatitis. She presented both of these projects at ICER public meetings, which are using to communicate with stakeholders and inform policy and reimbursements decisions. She is currently working on a cost-effectiveness analysis of a gene therapy for blindness. In addition, Marita continues to work on economic and other global health projects, including the cost-effectiveness of a Japanese Encephalitis vaccine in the Philippines, and etiological costs of diarrhea disease.

Lisa Laine, Affiliate Faculty, PhD Candidate
Lisa Laine is a PhD candidate in Economics at Jyväskylä University School of Economics and Economics, Finland, and holds a master’s degree in Economics and a bachelor’s degree in Mathematics. She will be receiving her PhD in Economics in 2017. Before the Yrjö Jahnsson Foundation postdoctoral fellowship, Lisa was a visiting scholar at the Economics departments in Columbia University (2015-2017) and Boston University (2012-2017). Lisa’s research interests lie in industrial organization with a particular focus on health care. In her PhD dissertation, she studied theoretical models of quality and price competition between public and private providers and did empirical research on the effects of obesity on long-term labor market outcomes. Lisa’s current research concerns the effects of health information on drug monitoring programs and the effects of choice in public health care.
The Louis Garrison Sr. and Marilyn Garrison Endowed Prize in Health Policy and Economics is intended to recognize annually an outstanding research paper in the area of health policy and economics. PORPP Professor Louis Garrison, Jr, and his wife, Fran established this fund in 2008 in fond memory of his parents Louis P. Garrison, Sr. and Marilyn J. Garrison, who were great believers in the value of education and science.

Congratulations to Erik Landaas for his winning paper titled: “Expanding Evidence-Based Technology Assessment for Coverage in Washington State.” Erik received a $1,000 monetary award and plans on conducting further HTA studies to evaluate the value of HTA programs in hospitals, other states and regions in the US.
Ryan Hansen, Joseph Babigumira, and Beth Devine are participating in an AHRQ Evidence Based Practice Center project evaluating Telehealth Consultations between medical providers. In partnership with our colleagues at OHSU, the team is performing a systematic review that was developed from an earlier evidence map project and our PORPP group is also responsible for creating two decision analyses evaluating the use of this technology in the US Health Care System and also investigating the impact of novel payment models.

Ryan Hansen and colleagues from the Kaiser Permanent Washington Health Research Institute (formerly Group Health) recently completed a PCORI funded evaluation (PI: Michael Von Korff) of opioid dose reduction efforts that occurred at Group Health in order to understand the impact of those dose reductions on overdose risk, medically attended injuries, and motor vehicle crashes. The team also surveyed current chronic opioid therapy patients in order to better understand their relationships with their medical providers. Publications from this project will be entering the public domain throughout the summer and fall.

Jenny Bacci, Peggy Odegard, Andy Stergachis, and Ryan Hansen have been working with community pharmacy partners at Bartell Drugs and QFC Pharmacies to evaluate strategies to increase adult vaccination rates for pneumonia, influenza, shingles, and whooping cough. This project, funded by the National Association of Chain Drug Stores, is implementing novel pharmacist-driven interventions to promote increased vaccinations and reduce the risk of these important adult infections. Through the implementation project we are also testing new reimbursement models and incentives that are aimed at further increasing rates and sharing risk for the patients who are not vaccinated with insurers.

**Andy Stergachis** was senior author of the largest meta-analysis of all observational studies to-date showing there was no difference in the risk of miscarriage, still births or major birth defects associated with the use of artemisinins anytime during the first trimester, compared with quinine. The study, “First-trimester artemisinin derivatives and quinine treatments and the risk of adverse pregnancy outcomes in Africa and Asia: A meta-analysis of observational studies,” was published in *PLoS Medicine* and coordinated through the Malaria in Pregnancy Consortium, established in 2007 at the Liverpool School of Tropical Medicine to improve the control and prevention of malaria in pregnancy. We analyzed data from five studies involving 30,618 pregnancies: four studies from Zambia, Tanzania, Rwanda, Kenya, Mozambique, Burkina Faso, and one large study from the Thailand based Shoklo Malaria Research Unit. We found no increase in the risk of miscarriage, stillbirth, or major birth defects associated with the use of artemisinins anytime during the first trimester compared with the use of quinine during the same gestational period. Limited safety data on the use of artemisinins in human pregnancies have historically prevented health authorities from recommending these therapies for malaria treatment in the first trimester, except in life-saving circumstances. It is possible that this study may result in a major change to recommended guidelines for the administration of artemisinins in the first trimester of pregnancy.

**Josh Carlson’s** research over the last 10 years has sought to inform healthcare decision making using economic modeling, evidence synthesis, preference assessment, and health policy evaluation. This work has spanned many diseases, topics, and methodologies, but specific focus areas include precision medicine, cancer, and performance-based risk sharing arrangements. He has diverse formal training in public health genetics, decision modeling, discrete choice experiments, comparative effectiveness, and outcomes research. Current projects include work with the Institute for Clinical and Economic Review (ICER), in which he leads a team in the development of economic models as part of ICER evaluations of new medical technologies. He is also working on two projects using value of information techniques to inform research prioritization activities with SWOG (UW PI)—a large cancer cooperative group, and the National Health Lung and Blood Institute (Co-investigator). He is a co-investigator on our PRIMER grant through the NIH common fund, leading aim two evaluating patient, provider, and payer preferences for precision medicine. Finally, he manages the performance-based risk sharing arrangements database and produce scholarly works and presentations on this evolving health policy topic.

In light of the current opioid epidemic in the U.S., **Denise Boudreau’s** current research portfolio has a major focus on opioid safety and treatment of opioid use disorder. Currently, she is Co-Principal Investigator of a large FDA mandated post-marketing safety study of misuse, abuse, and addiction with extended release/long acting opioids, and Co-investigator on a FDA mandated study to develop and validate diagnostic algorithms to measure abuse and addiction (http://www.fda.gov/Drugs/NewsEvents/ucm384489.htm). She is also leading a large, multisite, FDA funded study on opioid use during pregnancy and risk of birth defects and a co-investigator on a NIDA funded trial of buprenorphine to treat opioid...
RESEARCH HIGHLIGHTS

BE BOUNDLESS

use disorder. In 2017, they will also be launching a project at Kaiser Permanente Washington to better understand how to successfully taper patients off opioids or reduce their dosage.

Scott Ramsey and his team are performing prospective and retrospective analyses aimed at improving value in the use of drugs, devices, and interventions aimed at reducing the human and economic burden of cancer. The Hutchinson Institute for Cancer Outcome Research which he directs is also developing novel approaches for multi-stakeholder engagement in research. He is currently directing a large, prospective randomized controlled trial evaluating approaches to improve colony stimulating factor prescribing for patients receiving myelosuppressive chemotherapy.

Aasthaa Bansal, in collaboration with Anirban Basu and Dave Veenstra, is using predictive modeling and decision theory to develop methods for the optimal timing of treatment and biomarker testing in settings of long-term patient follow-up. This work is motivated by Aasthaa’s research on treatment sequencing in chronic myeloid leukemia, which was funded by a research starter grant from the PhRMA Foundation. Aasthaa is also working with PORPP affiliate faculty Lotte Steuten on methods for developing cost-effective biomarker combinations for disease diagnosis and prognosis. Finally, she is a co-investigator and lead statistician on a PCORI-funded pragmatic trial in cancer, as well as studies on survival, costs and resource utilization in cancer using large healthcare claims databases and EHR, where she is collaborating with PORPP affiliate faculty Scott Ramsey at the Hutchinson Institute for Cancer Outcomes Research.

Sean Sullivan, Julia Slejko, and Anirban Basu published a paper on the “Returns to scientific publications for pharmaceutical products in the United States” in Health Economics in August 2017. Five years in the making, this paper was part of the last Health Tech Fund project. This study looks at the effect of publications on revenue for 22 branded drugs in 3 markets – statins, rheumatoid arthritis and asthma – using an “event-study” approach combined with quarterly US sales data from 2003-2013. They hypothesize that publications should have an important impact on sales in markets with high generic competition, and less in those without or with high branded competition. Using econometric methods that controls for unobserved drug-specific confounders, they find evidence supporting these hypotheses. For statins and asthma drugs, where there was some competition, clinical studies in high-impact journals increased sales in the next quarter by $8 million per publication. In rheumatoid arthritis, where competition is limited, the effect on sales was mediated by the effect on volume. Studies published in lower impact journals seemed to have a negative influence. HEOR studies were only important in the market with high generic competition, increasing statin sales in the next quarter following publication increased by $2.2 million on average. Our results indicate that investments by manufacturer on clinical and HEOR need to be strategic and that such strategies should account for and also be complemented with public investments in such studies to achieve a more efficient production of clinical and HEOR information that can improve patient welfare.

Precision medicine, specifically pharmacogenomics, is an area of research focus for PORPP. This year, Beth Devine studied pharmacogenomic biomarkers from two perspectives. First, using data from the FDA’s Table of Pharmacogenomic Biomarkers and PharmGKB, she and her team characterized the strength of evidence in FDA labels for pharmacogenomic biomarker-guided medication use. Studying 137 drugs, involving 49 biomarkers, they found the strength of evidence for pharmacogenomic biomarker use is low, underscoring the need for additional research to achieve the promise of precision medicine. Assisting her were current UW/Bayer fellow, Lauren Chin and PORPP alumni Will Canestaro, Kate Keyloun and Sarah Baradaran. Their work was nominated for the Marco Ramoni Distinguished Paper Award at the American Medical Informatics Association Joint Summits on Translational Science, San Francisco (March 2017). Second, using clinical data from the UW electronic health record, Beth’s team estimated the frequency of pharmacogenomic-guided medication use in routine clinical practice, and found that use was extremely low, especially for germline (versus somatic) biomarkers. Current PORPP PhD students Nathaniel Hendrix and Wei-Jhih Wang, and PORPP alumna Kate Keyloun joined Beth in this research, now published in Clinical Pharmacology and Therapeutics.
The University of Washington School of Pharmacy (UWSOP) and the Institute for Clinical and Economic Review (ICER) formed a partnership in 2016. This collaboration leverages UWSOP’s expertise in economic modeling of pharmaceutical interventions to support ICER’s growing body of work in new drug assessments. The UWSOP’s Pharmaceutical Outcomes Research and Policy Program (PORPP) research team develops cost-effectiveness models for soon-to-be or recently FDA approved drugs, leveraging evidence synthesis work performed by ICER and publicly-available data.

The UW team is comprised of faculty (Josh Carlson (PI), David Veenstra, Anirban Basu, and Lotte Steuten), staff scientists (Greg Guzauskas and Marita Zimmermann), and graduate students (Elizabeth Brouwer and Nathaniel Hendrix). To date we have completed economic evaluations on 6 topics: multiple myeloma, non-small cell lung cancer (NSCLC), plaque psoriasis, multiple sclerosis, atopic dermatitis, and osteoporosis.1-6 We are currently working on an evaluation of voretigene neparvovec, a gene therapy for vision loss associated with biallelic RPE65-mediated retinal disease.7

In addition to the work being presented at ICER public meetings and published as part of ICER’s full topic reports, our work has been disseminated at the 2017 ISPOR annual meeting in Boston (5 abstracts) and via peer reviewed journals—1 in press (multiple myeloma) and 1 under review at Annals of Internal Medicine (plaque psoriasis).8-13 A detailed description of our findings is beyond the scope of this summary, but overall we found that dupilimab in atopic dermatitis, drugs used in plaque psoriasis (adalimumab, etanercept, infliximab, ustekinumab, brodalumab, ixekizumab, secukinumab and apremilast), tyrosin kinase inhibitors (erlotinib, gefitinib, and afatinib) in NSCLC, and alemtuzumab in multiple sclerosis provided intermediate to high value for money according to ICER’s thresholds, whereas the other drugs for these conditions and the drugs for the other conditions were generally considered to provide low value for money. Of note, daratumumab in multiple myeloma was subsequently found to provide good value for money according to ICER’s thresholds in a follow-on peer reviewed publication that included data that was not available during the initial review.8

Our interactions with key stakeholders, primarily patient groups and manufacturers, have been extremely helpful to the process. One interaction that warrants mention was that with Sanofi/Regeneron on the evaluation of dupilimab in atopic dermatitis, in which the manufacturer was fully engaged in the process and worked iteratively with the ICER team and health insurers more broadly to establish a value based price for their new product.

Our overall experience developing economic evaluations as part of ICER’s topic reviews has been very positive. We feel that our work in collaboration with ICER, along with that of the other modeling teams from the University of Colorado, led by PORPP alum Jon Campbell, and the recently added group from the University of Illinois Chicago led by Daniel Touchette, has raised the profile of health economics and outcomes research in United States and contributed valuable evidence to support healthcare decision making for a variety of healthcare stakeholders. We look forward to continued collaboration with ICER and interaction with stakeholders to improve the process of assessing the value of pharmaceuticals in the U.S.
HONORS AND AWARDS

Students

Blythe Adamson
- United States Delegate to the 6th Lindau Nobel Laureate Meeting on Economics (August 2017)
- ISPOR Outstanding Service Award (May 2017)
- Third Place in Global Innovation eXchange (GiX) Competition Finals in Beijing, China, (Nov 2016)

Mark Bounthavong
- Graduate Student Leadership Award, University of Washington, School of Pharmacy
- Rubenstein Scholarship Fund, University of Washington, School of Pharmacy
- Alumni Achievement Award, Western University of Health Sciences, College of Pharmacy

Lizzy Brouwer
- Rubenstein Scholarship Fund, University of Washington, School of Pharmacy

Horacio Duarte
- Diagnostics Abstract Award at the IDWeek 2016 Conference (Infectious Diseases Society of America) in New Orleans, LA
- Young Investigator Award at 2017 Conference on Retrovirus and Opportunistic Infections

Laur Hart
- 2016-2017 UW Retirement Association Graduate Student Fellowship in Aging
- ACCP Research Institute Futures Grant to support thesis research

Erik Landaas
- PORPP endowed prize in Health Policy and Economics
- AHRQ T-32 pre-doctoral fellowship trainee and Eli Lilly awardee

Meng Li
- Rubenstein Scholarship Fund, University of Washington, School of Pharmacy

Solomon Lubinga
- Scholarship Recipient, Reducing Barriers for the Ambitious Fund
- Rubenstein Scholarship Fund, University of Washington, School of Pharmacy

Sheila Shapouri
- Washington State Student Pharmacist of the Year (Awarded by Washington State Pharmacy Association; Annual Meeting-November 2015)

Lauren Strand
- ISPOR 22nd Annual International Meeting Research Presentation Award Finalist

Elisabeth Vodicka
- PORPP Endowed Prize in Health Policy and Economics (Co-Recipient)
- Scholarship Recipient, Human Rights to Family Planning Conference, Seattle, WA
- Scholarship Recipient, Reducing Barriers for the Ambitious Fund
- Rubenstein Scholarship Fund, University of Washington, School of Pharmacy

Wei-Jhih Wang
- Rubenstein Scholarship Fund, University of Washington, School of Pharmacy

Faculty & Post-Docs

Brian Bresnahan
- June 2017, recipient of a 2017 Radiologic Society of North America (RSNA) Honored Educator Award.

Beth Devine
- 2017: Manuscript nominated for the Marco Ramoni Distinguished Paper Award, American Medical Informatics Association (AMIA) Joint Summits on Translational Science. The Marco Ramoni award recognizes the paper that best exemplifies the spirit and scholarship of Marco Ramoni in applying informatics methods to the elucidation of basic molecular biology processes that are relevant to the conquest of human disease. Chin, Devine (co-primary authors), et al. Characterizing the Strength of Evidence in FDA Labels for Pharmacogenomic Biomarker-Guided Medication Use. AMIA Jt Summits Transl Sci Proc. 2017 Jul

Ryan Hansen
- 2016 Pinnacle Award, American Pharmacists Association Foundation: Kelley-Ross Pharmacy Group

Zachary Marcum
- 2017 ACC/AGS/NIA Pharmacotherapy in Older Adults with CVD Workshop Travel Award Winner
PORTPP Student research identifies costs for health plans that exclude contraception

By Sarah C.B. Guthrie

At companies whose health insurance plans exclude contraception coverage, female employees experienced 33 more unintended pregnancies per 1,000 women, and more unintended births and terminations. Such plans might also result in higher overall costs for employers. Those were the primary findings of a study led by the University of Washington School of Pharmacy and Princeton University, recently published in the journal Contraception.

“The women who were most affected were ages 18 to 24 or over 40 years old,” said Will Canestaro, a UW graduate student and one of the study’s two lead authors. “Essentially, women at the start and end of their reproductive years were most sensitive to the costs for paying out of pocket for birth control.”

It’s well established that access to birth control lowers unintended pregnancies and terminations, and is cost-effective at the societal level. Under the Affordable Care Act (ACA), employers are required to cover birth control, but in recent years several employers have gone to court to opt out of the requirement. Canestaro and colleague Elisabeth Vodicka were curious about the effects that private health insurers’ birth-control coverage had on plan costs and reproductive-health decisions of women on those plans.

The students reached out to Don Downing, a UW pharmacy professor, and health economist James Trussell, professor emeritus of economics and public affairs at Princeton University. He specializes in reproductive health and demographic methodology. The team used a model to extrapolate outcomes for a large, nationally representative sample and found a statistically significant difference in unintended pregnancy and terminations.

“Employers may be opting out of providing birth control, but this study suggests that offering no coverage may result in an increase in unintended pregnancies, terminations, and increased costs for the employer-paid plans,” Vodicka said.

Employers whose insurance plans lack birth control coverage may face difficulty recruiting and retaining women in the age groups most affected in the study, Canestaro added. The model created by the team creates opportunity for further study, including the return on investment for employers choosing to opt in or out of plan coverage for birth control; the impact that public-plan coverage, such as Medicaid, may have on unintended pregnancies; and the overall impact to population health in America by modeling how many women are affected by these plans’ benefit decisions.

“Ultimately, we want to aid employers in making informed decisions,” Vodicka said.

To see the original op-ed published in the Seattle Times, go to: bit.ly/STop-ed
BYTHE ADAMSON


MARK BOUTHAVONG


ELIZABETH BROUWER

SHUXIAN CHEN

POSTER: Chen S, Carlson JJ. Evaluating the efficiency of coverage with evidence development implementation. ISPOR 22nd Annual International Meeting May 20-24. Boston, MA, USA

LAURENCHIN
Yu JS, Chiu L, Oh J, Farias J. Systematic Review of Performance-Based Risk-Sharing Agreements for Pharmaceutical Products in the United States. JMCP. (accepted 4/13/2017 to JMCP) **Chin L, **Devine B, Baradaran S, Keyloun K, Canestaro WJ, Pham J. Characterizing the strength of evidence in FDA Labels for pharmacogenomic biomarker-guided medication use. AMIA Jt Summits Transl Sci Proc. (**co-primary authors; accepted 12/8/2016 to AMIA Jt Summits Transl Sci Proc

SAMANTHA CLARK


SHALAK GUNJAL

ERIK LANDAAS
Landaas, E., Franklin, G., Thompson, J., Lessler, D., Morse, J., Mootz, R., ... Sullivan, S. (2016). EXPANDING EVIDENCE-BASED TECHNOLOGY ASSESSMENT FOR COVERAGE IN WASHINGTON STATE. International Journal of Technology Assessment in Health Care, 32(3), 140-146. doi:10.1017/S026642316000192

MENG LI


SOLOMON LUBINGA


MICHAEL SERBIN
PUBLICATIONS

SHEILA SHAPOURI
POSTER PUBLICATION
Shapouri S, Devine EB. Cost-Utility Analysis of Outpatient Dalbavancin for Acute Bacterial Skin and Skin Structure Infections (ABSSSI) versus Inpatient Vancomycin Followed by Oral Linezolid. ISPOR 22nd Annual International Meeting; May 20-14, 2017; Boston, MA

KANGHO SUH
Yeung K, Suh K, Basu A, Garrison LP, Bansal A, Carlson JJ. Paying for cures: how can we afford it? Managed care pharmacy stakeholders’ perceptions of policy options to address affordability of prescription drugs. Journal of Managed Care & Specialty Pharmacy (accepted and expected print October 2017).

LAUREN STRAND

LAUREN STRAND
Alain Berton, David Bluemke, Joao Lima, Bruce Psaty, Susan Heckbert, Joseph Delaney, Robyn McClelland. The use of propensity score matching to estimate the association between new statin use and left ventricular structure: in the Multi-Ethnic Study of Atherosclerosis (MESA). Accepted to the 33rd International Conference on Pharmacoepidemiology and Therapeutic Risk Management, August 2017, Montreal Canada.

MARITA ZIMMERMANN

JOSEPH BABIGUMIRA


AASTHAA BANSAL


ANIRBAN BASU


DENISE BOUDREAU


BRIAN BRESNAHAN

JOSH CARLSON


BETH DEVINE


LOU GARRISON

Towse A, Garrison L. Value Assessment in Precision Cancer Medi


RYAN HANSEN

Hansen RN, Pham AT, Lovelace B, Balaban S, Wan GJ. Comparative Analysis of Inpatient Costs for Obstetrics and Gynecology Surgery Patients Treated with IV Acetaminophen and IV Opioids versus IV Opioid Monotherapy for Postoperative Pain. Annals of Pharma


ZACHARY MARCUM


JOSH ROTH


SCOTT RAMSEY


ANDY STERGACHIS

Jenny AM, Li M, Ashbourne E, Aldrink M, Funk C, Stergachis A. Assessment of the scope and evaluation of medical donation pro


SEAN SULLIVAN


DAVID VEESTRA


DAVENE WRIGHT


RECENT FACULTY GRANTS

JOSEPH BABIGUMIRA
Gap in polymerase chain reaction (PCR) testing for chronic myeloid leukemia in low- and middle-income countries. Max Foundation Framework for return on investment in pharmaceutical quality assurance in middle-income countries. U.S. Pharmacopoeial Convention

AASTHAA BANSAL
PI Comparative effectiveness of molecular response guided sequential treatment strategies in chronic myeloid leukemia
Sponsor: PhRMA Foundation 2015-2017
Co-I (PI: Sullivan, Ramsey) A Pragmatic Trial to Improve Colony Stimulating Factor Use in Cancer
Sponsor: PCORI 2015-2019
Co-I (PI: Odegard) Implementing Value-Based Collaborations to Improve Immunizations
Sponsor: National Association of Chain Drug Stores 2016-2017

ANIRBAN BASU
Co-PI, (PI Coleman, Kaiser Permanente) NHLBI R01, Effectiveness of Gastric Sleeve vs. Gastric Bypass for Cardiovascular Disease 2016-2019

DENISE BOUDREAU


Co-Investigator, Primary Care Opioid Use Disorders Treatment Trial (PROUD) Coordinating Center, National Institute on Drug Abuse, 2017-2020.

JOSH CARLSON
PI ICER Economic Modeling; ICER, 1/2016-12/2017
Co-Investigator (Basu PI) Value of Information Methods for NHLBI Trials; NHLBI, 2015-2019
Co-Investigator (Veenstra PI), Personalized Medicine Economics Research (PrIMER) NIH/NIAAA, 2013-2018

BETH DEVINE
PI, UW-Allergan Post-Doctoral Fellowship, Allergan Pharmaceuticals, 2012-

LOUIS GARRISON, JR.
Principal Mentor, UW-Pfizer Post-Doctoral Fellowship, 2016-2018.
Co-Inv. (PI-Chung) University of Nairobi HIV Capacity Building Fellowship, USAID, 2014-2018

RYAN HANSEN
Mallinckrodt Pharmaceuticals: Estimating the Economic Impact of H.P. Acthar Gel in Infantile Spasms; Role: Principal Investigator
AHRQ EPC-V: Telehealth for Acute and Chronic Consultation – Totten; PI; Role: Co-Investigator
Cystic Fibrosis Foundation: Cost Effectiveness Analysis and Comparative Effectiveness Research of STOP2; Kessler; PI; Role: Co-Investigator

ZACHARY MARCUM
K12HS022982 UW K12 in Patient-Centered Outcomes Research (Sullivan PI) – AHRQ. Role: Scholar
PI, Elmer M. Plein Endowed Research Fund
American College of Clinical Pharmacy Research Institute Futures Grant Program, Mentor to Laura Hart

SCOTT RAMSEY
Ramsey Sub-PI (Main PI Charles Blanke, OSHU)
Ancillary Study to Evaluate Patient and Physician Knowledge, Attitudes, and Preferences Related to Return of Genomic Results in the SWOG 1400 (S1400) Clinical Trial. Project Dates 8/2016-2/2018

LOTTE STEUTEN
Co-I (PI: Feng/Thornquist/Pepe), The Early Detection Research Network: Data Management and Coordinating Center; NIH/NCI 2000-2021

ANDY STERGACHIS

SEAN SULLIVAN
PI, CHASE K12 Training, 2014-2019, AHRQ
Co-Inv. (PI Linda Teri) From Evidence-Based to Practice: Implementing RDAD in AAA Community-Based Services. (National Institute of Aging)
Co-Director, Pacific Northwest Evidence-Based Practice Center (AHRQ) August 2012 to July 2017
Co-Investigator, (PI-Ramsey) Pragmatic Trial of Pharmacist-based Guideline Use of CSF, PCORI; 2015-2019

DAVID VEEENSTRA
U24, NHGRI, Veenstra (co-PI), Jarvik G (PI) Medical Genetics UW
R01, NHGRI, Veenstra (co-PI) with Josh Peterson (Vanderbilt) and Susan Snyder (Geisinger Healthcare System)

DAVENE WRIGHT
PI, Leveraging Incentives for Obesity Prevention, 2016-2018, American Heart Association
This year, the Graduate Certificate in CER, led by PORPP faculty (Beth Devine, Lou Garrison, Anirban Basu) and jointly held in Health Services (Dave Grembowski, Larry Kessler) underwent the required five year review by the UW Graduate School Council. The Council commended the PORPP faculty and staff (Penny Evans) for the work invested in building this program, and granted the program continuing status, with subsequent review to coincide with the academic program review of the Department of Pharmacy Graduate Program in 2019-2020. The Certificate is intended for PhD students in PORPP and Health Services, and provides optional, cutting edge training in advanced CER research methods. Two of the courses have proven so popular over time that they have recently become core courses: Advanced Methods in CEA/CER (Josh Carlson) and Causal Inference using Observational Data (Anirban Basu). For more information visit: https://sop.washington.edu/department-of-pharmacy/pharmaceutical-outcomes-research-policy-program-porpp/certificate-programs/ for additional information.

As one of six Centers of CER Excellence nationwide, originally funded by the PhRMA Foundation, PORPP faculty played a prominent role in a national invitational conference held at the Ronald Reagan Building in Washington DC in January 2017. Beth Devine served on the year-long planning committee for the conference; Lou Garrison was a featured speaker. The title of the conference was “Comparative Effectiveness and Patient-Centered Outcomes Research: Enhancing Uptake and Use by Patients, Clinicians and Payers”. Beth Devine is lead author on a manuscript recently submitted to the Journal of CER, which details the history of the PhRMA Foundation’s CER Centers of Excellence initiative.

An important change for the BRAMS program occurred this spring with the approval of our full-time Applied enrollment option. When the BRAMS program launched in 1998, the intended applicant pool was healthcare industry quality/regulatory professionals interested in a part-time, in-person, evening program. It soon became clear that a full-time option was necessary, both permitting students to specialize in an area of interest through additional courses, e.g., Chemistry, Manufacturing and Control (CMC) statistics, pharmacoepidemiology, medical biometry, and satisfying visa requirements for international students.

Fourteen students graduated with a master’s degree from the BRAMS program in the 2016-17 academic year. Their practicum topics included:

- CBE30 Regulatory Submission for the Acquisition of a Blood Bank
- Validation Planning of the Presage Biosciences Laboratory Information Management System
- Gap Analysis to Assess Compliance with the Drug Supply Chain Security Act of 2013 and 340B Drug Pricing Program
- Process Definition and Template Design for Clinical Study Report Appendices
- EKOS Corporation Special 510(k)
- The Impact of the FDA’s Guidance on Reprocessing: A Medical Device Company’s Approach to Compliance
- Gap Assessment of Competency Evaluation for CLIA Assays
- Creation of Eye Bank Standards and SOPs for a Global Program
- Creation of a Clinical Study Report Template
- Evaluation and Application of the 2016 European Union ‘Own Brand Labeller’ Requirement for Medical Devices
- Submitting a New Drug Application Annual Report and an Orphan Drug Annual Report for an Orphan Pharmaceutical Product
- Preparation of an Annual Quality Product Review for a Licensed Bulk Drug Substance at a Contract Manufacturing Organization
- Creation and Implementation of an Annual Internal Audit Program for a Good Manufacturing Practice Facility
- Developing a Quality Assurance Management Plan for Clinical Trials

Looking ahead, the BRAMS program is engaged in a strategic planning activity that is focused on how it can be even better positioned for the future, including preparation for the 2019-2020 review by the Graduate School of all of the School of Pharmacy’s graduate programs.