July 2013

News and Notes

Changing of the Guard: Thomas P. Loughran, M.D., leaves for University of Virginia

There are few names as synonymous with Penn State Hershey Cancer Institute as Thomas P. Loughran, Jr., M.D. As founding director of the Institute, Loughran is world-renowned for his pioneering work with large granular lymphocyte (LGL) leukemia, a rare disease that he first identified while on fellowship at the Fred Hutchinson Cancer Research Center in Washington. Loughran has been part of the Penn State Hershey faculty since 2003 when he took on the leadership role for growing and establishing the Cancer Institute into the internationally-recognized facility that it is now. His reputation also caught the attention of the University of Virginia where he will begin a new step in his career as director of the University of Virginia Cancer Center, F. Palmer Weber-Smithfield Foods professor of oncology research, and professor of medicine in August.

Loughran's research into both the causes and the progression of LGL leukemia has had implications in other areas of disease trials as his team tests their theory that a previously unknown virus may be the root cause of certain cancer cells. This recent work was recognized as part of the National Cancer Institute's Provocative Questions project, which awarded funds to researchers at the forefront of understanding of cancer development. Loughran's work has had continuous research funding since 1985 and has led to the creation of an international registry for patients with LGL leukemia, which tracks history and

outcomes for 500 patients. The registry is one example of how Loughran practices translational medicine—creating benchside lab work that becomes bedside treatments.

"His number one concern is about patients and he brings that to the lab," says Susan Nyland, Ph.D., assistant professor of medicine and a research assistant in Loughran's LGL lab. "He makes sure we remember that at all times." As a researcher, Nyland says it can be difficult to remember the personal stories behind the specimens they work with, but Loughran instills in his staff how precious the patients are. "Our work gives us a lifelong relationship with the patients. He's put that idea in my brain and in my heart.

Nyland recalls times in the lab when Loughran supported researchers even when the projects didn't seem to work out. "He encouraged us to always realize that what you find is important, even if it doesn't serve us today. Sometimes we find things that another person in the lab was able to apply in the future," she says. "Even when it didn't work, he never told us to abandon it because we might find a way to use it later. He sees the possibilities that other people don't look at."

Loughran himself credits the working relationships that were built over the years as one of the many things he will miss at Penn State Hershey. "I will miss the spirit and enthusiasm of the Cancer Institute and everyone who has contributed to us becoming one of the best places in the country for both patient care and cancer research."

Though Loughran admits to moving to new positions somewhat frequently, he notes that he has been at the Cancer Institute for 10 years, a record tied with his time at the Fred Hutchinson Cancer Research Center. "Whenever you move, you always get recharged or have new ways of seeing things through people's eyes," he says. Loughran's new position at University of Virginia will allow him to pursue two major initiatives: 1) link the clinic to the research labs so translational medicine can work in practice; 2) developing a bigger clinical presence in the state of Virginia, particularly in developing a better infrastructure of clinical trials, which is something that Penn State Hershey does very well, led in part by Chandra Belani, M.D., deputy director of the Cancer Institute. He agrees that Loughran's research on LGL leukemia has helped put the Cancer Institute on the map. "If anyone is doing work on LGL leukemia, they want to discuss it with him and get his input. If somebody is submitting a grant or a peer-reviewed paper, they would want Dr. Loughran's input. His work has helped build the Cancer Institute since its inception."

"He was brought here to build an institute that didn't exist," says Robert C. Aber, M.D., the J. Lloyd Huck Chair of the Penn State Hershey Department of Medicine, who was part of the original search committee that recruited Loughran. "As the inaugural director, I think he has really done an excellent job and his record reflects that. He's an excellent leader to interact with and an outstanding human being."

Cancer Institute Joins Big Ten Cancer Research Consortium

In athletics, the Big Ten universities compete against each other, but now many will join together against a common foe - cancer. The Cancer Institute is uniting with university cancer centers to form a powerful collaboration -the Big Ten Cancer Research Consortium--designed to transform cancer research through collaborative oncology trials that leverage the

scientific and clinical expertise of the Big Ten universities. The Big Ten Cancer Research Consortium creates a unique team-research culture in which cancer leaders will collaborate with and mentor the research leaders of tomorrow with the goal of improving the lives of all cancer patients. Click here to learn more about how the consortium will help to turn ideas into potential new treatments.

Community Sciences and Health Outcomes Core Welcomes Summer Intern Alicia Miggins

Originally from Guyana, Alicia Miggins considers herself very fortunate to be a summer intern with the Community Sciences and Health Outcomes (CSHO) core at Penn State Hershey Cancer Institute. Alicia will work closely with Patricia Robinson, B.S., Community Health Worker, under the guidance of Eugene Lengerich, V.M.D., M.S., Director, Harrisburg Community Cancer Network.

Alicia is a senior majoring in Molecular Biology at Long Island University Brooklyn Campus in New York. She is a participant of the summer undergraduate research program (SURP) at Penn State Hershey.

Alicia has been involved in various research and volunteer experiences. At her home institution, she is a member of the Minority Biomedical Research Support Program Research Initiative for Scientific Enhancement (MBRS RISE), a fellowship that gives students skills for graduate school. Interestingly, her experience in MBRS RISE has allowed her to conduct research on bees in urban gardens. During high school and college, she volunteered in hospitals and non-profit organizations, sparking an interest in medicine and public health. She also volunteered at East New York Farms, a non-profit organization that promotes local sustainable agriculture and community-led economic development.

Alicia is anxious to begin her work with the Community Health Work (CHW) program in the CSHO core. She will evaluate the outcomes of the CHW program and help to prepare for research on nutrition and food availability in Harrisburg and central Pennsylvania. Alicia is excited to be a summer intern because it will help her toward her career goal of entering an M.D./Ph.D. program and eventually becoming a medical scientist.

Sixth South Addition East Inpatient Unit Move Complete

On Thursday, June 13, patients and staff on Cancer Institute Inpatient Unit Sixth South Addition East were relocated to the seventh floor. The Inpatient Unit Third Main Building South move to the seventh floor will follow on Thursday, July 11. The move combines both inpatient units into one large unit dedicated to adult cancer care and is part of our effort to improve the quality and efficiency of the care we deliver to our patients. If you have any questions, please contact Michelle Kopp, nurse manager at 717-531-6736.

Cancer Institute Receives $52,500 from Pink Zone at Penn State

The 2013 WBCA Pink Zone at Penn State was a record-breaking event in the Lady Lions' fight against breast cancer. This year, the Penn State women's basketball team donated $260,000 to six breast cancer charities, including Penn State Hershey Cancer Institute. In seven Pink Zone annual events, the Lady Lions have now donated $825,317.73 to various breast cancer charities.

Through past Pink Zone at Penn State funds, the Penn State Hershey Cancer Institute activated the Lady Lion Basketball Breast Cancer Research Endowment. The monies from this year's Pink Zone at Penn State will continue to grow the endowment level of the Lady Lion Basketball Breast Cancer Research Endowment. This year's funding will support the research of Drs. El-Bayoumy, Manni and Vanden Heuvel, who are testing breast cancer prevention by combining lower doses of antiestrogens with a healthy diet rich in omega-3 fatty acids. Past Pink Zone at Penn State funds have been used to support Dr. Maria Baker's Cancer Genetics Program that provides individuals with information based on their family history and/or genetic testing results to help in the prevention and early detection of breast cancer.

"We are proud to be a designated beneficiary of the Pink Zone 2013," said Thomas P. Loughran, Jr., M.D., professor of medicine and director, Penn State Hershey Cancer Institute. "In these times of drastically reduced federal funding for research, philanthropic funds provided by the Pink Zone are essential for continuing groundbreaking research in breast cancer such as that being done at the Cancer Institute."

The Lady Lions welcomed a record 621 breast cancer survivors and a Pink Zone record 14,713 fans to the Bryce Jordan Center as Penn State took on Michigan on February 24, 2013. The Lions topped the Wolverines, 68-57, in front of the fourth-largest crowd in Bryce Jordan Center history as they honored breast cancer survivors and generated awareness for the fight against breast cancer.

The 2014 WBCA Pink Zone at Penn State date will be announced when the Big Ten schedule is revealed in August. For more information on the Pink Zone at Penn State, visit the official Pink Zone website at PennsylvaniaPinkZone.org.

Education and Research

Faculty Grants

Primary Investigator	Research	Sponsor
Keith Cheng, M.D., Ph.D.	Creation of a new Penn State Zebrafish Functional Genomics Core	NIH, office of the Director
Clawson, Gary A	Targeting Pancreatic Cancer with Aptamers to the	PA Tobacco Settlement Fund

	CCK-B Receptor	(TSF)
Gunther, Edward J	Interrogating the Role of the Myoepithelial Cells in Mammary Carcinogenesis	PA Tobacco Settlement Fund (TSF)
Kester, Mark	Immunological & Anti-tumor Mechanisms of LipC6 Treatment in a Murine Model of HCC	PA Tobacco Settlement Fund (TSF)
Matters, Gail L	Targeting Pancreatic Cancer with Aptamers to the CCK-B Receptor	National Cancer Institute
Miller, Barbara A	The Ion Channel TRPM2 Regulates Neuroblastoma Response to Chemotherapy Through Modulation of Oxidative Stress	Hyundai Hope on Wheels
Miller, Barbara A	The Ion Channel TRPM2 a Target to Enhance Chemo Sensitivity in Neuroblastoma	Alex's Lemonade Stand
Shantz, Lisa	Role of mTOR in Repair of UVB-induced DNA Damage	PA Tobacco Settlement Fund (TSF)
Song, Jianxun	Reprogramming HBV-Specific CTL's from Stem Cells for Cell-Based Therapies	PA Tobacco Settlement Fund (TSF)
Stairs, Douglas B	Investigating the Mechanisms of Esophageal Squamous Cell Carcinoma Invasion	PA Tobacco Settlement Fund (TSF)

Faculty Publications (April - May 2013)

1. Bergoglio, V., Boyer, A. S., Walsh, E., Naim, V., Legube, G., Lee, M. Y., Rey, L., Rosselli, F., Cazaux, C., Eckert, K. A., and Hoffmann, J. S. (2013). DNA synthesis by Pol eta promotes fragile site stability by preventing under-replicated DNA in mitosis. J Cell Biol 201, 395-408.
2. Chen, Y. C., Prabhu, K. S., Das, A., and Mastro, A. M. (2013). Dietary selenium supplementation modifies breast tumor growth and metastasis. Int J Cancer. Apr 23. doi: 10.1002/ijc.28224. [Epub ahead of print].
3. Gunderson, A. J., Mohammed, J., Horvath, F. J., Podolsky, M. A., Anderson, C. R., and Glick, A. B. (2013). CD8(+) T cells mediate RAS-induced psoriasis-like skin inflammation through IFN-gamma. J Invest Dermatol 133, 955-963.
4. Horn, K., Branstetter, S., Zhang, J., Jarrett, T., Tompkins, N. O., Anesetti-Rothermel, A., Olfert, M., Richards, T., and Dino, G. (2013). Understanding Physical Activity

Outcomes as a Function of Teen Smoking Cessation. J Adolesc Health. Apr 5. doi:pii: S1054-139X(13)00074-8. 10.1016/j.jadohealth.2013.01.019. [Epub ahead of print].
5. Hu, S., and Xiong, N. (2013). Programmed Downregulation of CCR6 Is Important for Establishment of Epidermal gammadeltaT Cells by Regulating Their Thymic Egress and Epidermal Location. J Immunol 190, 3627-3275.
6. Lei, F., Song, J., Haque, R., Xiong, X., Fang, D., Wu, Y., Lens, S. M., and Croft, M. (2013). Transgenic expression of surviving compensates for OX40-deficiency in driving Th2 development and allergic inflammation. Eur J Immunol. Apr 25. doi:10.1002/eji.201243081. [Epub ahead of print].
7. Montgomery, S.B., Goode, D.L., Kvikstad, E., Albers, C.A., Zhang, Z.D., Mu, X.J., Ananda, G., Howie, B., Karczewski, K.J., Smith, K.S., Anaya, V., Richardson, R., Davis, J.; The 1000 Genomes Pilot Project Consortium, Macarthur, D.G., Sidow. A., Duret, L., Gerstein, M., Makova, K.D., Marchini, J., McVean, G., Lunter, G. (2013). The origin, evolution, and functional impact of short insertion-deletion variants identified in 179 human genomes. Genome Res 23, 749-761.
8. Nguyen, H. L., Yang, X., and Omiecinski, C. J. (2013). Expression of a novel mRNA transcript for human microsomal epoxide hydrolase (EPHX1) is regulated by short open reading frames within its 5'-untranslated region. RNA 19, 752-766.
9. Obasaju, C., Bowman, L., Wang, P., Shen, W., Winfree, K.B., Smyth, E.N., Boye, M.E., John, W., Brodowicz, T., Belani, C.P. (2013). Identifying the target NSCLC patient for maintenance therapy: an analysis from a placebo-controlled, phase III trial of maintenance pemetrexed (H3E-MC-JMEN). Ann Oncol 24, 1534-1542.
10. Rajala, H. L., Eldfors, S., Kuusanmaki, H., van Adrichem, A. J., Olson, T., Lagstrom, S., Andersson, E. I., Jerez, A., Clemente, M. J., Yan, Y., Zhang, D., Awwad, A., Ellonen, P.,Kallioniemi, O., Wennerberg, K., Porkka, K., Maciejewski, J.P., Loughran, T.P. Jr., et al. (2013). Discovery of somatic STAT5b mutations in large granular lymphocytic leukemia. Blood. Epub ahead of print.
11. Stessman, H. A., Baughn, L. B., Sarver, A., Xia, T., Deshpande, R., Mansoor, A., Walsh, S. A., Sunderland, J. J., Dolloff, N. G., Linden, M. A., et al. (2013). Profiling bortezomib resistance identifies secondary therapies in a mouse myeloma model. Mol Cancer Ther. Epub ahead of print.
12. Yang, Y., Fiskus, W., Yong, B., Atadja, P., Takahashi, Y., Pandita, T. K., Wang, H. G., and Bhalla, K. N. (2013). Acetylated hsp70 and KAP1-mediated Vps34 SUMOylation is required for autophagosome creation in autophagy. Proc Natl Acad Sci USA 110, 6841-6846.

Community

Taking a swing against breast cancer

Penn State Hershey Cancer Institute is a statewide sponsor of the Pennsylvania Breast Cancer Coalition's (PBCC) sixth annual Home Run Derby. Funds raised from this event help the PBCC serve breast cancer survivors and their families right here in Pennsylvania. To date, this event has raised more than $400,000 to support women and families battling breast cancer. The Home Run Derby begins Tuesday, June 18 at Metro Bank Park (home of the Harrisburg Senators) and ends on Tuesday, July 30 at Jerry Uht Park (home of the Erie SeaWolves). Follow the event's success at PAHomeRunDerby.org.

Upcoming Events

Register today for the Third Annual Chocolate Tour

Join us on Saturday, August 24, 2013 at the Milton Hershey School for the Third Annual Chocolate Tour to support cancer research at Penn State Milton S. Hershey Medical Center. With exciting run, walk and cycling events, there is something for everyone! Runners and walkers will enjoy local chocolate from the area. Cyclists will also enjoy rides through the beautiful countryside of central Pennsylvania with its Amish farms, wooded areas, and covered bridges while visiting the historic chocolate towns of Hershey (home of Hershey's chocolate factory), Elizabethtown (home of M&M/Mars chocolate factory), and Lititz (home of Wilbur Chocolate Company). Click here to register and for more information.