PITTSBURGH LIVER RESEARCH CENTER

A partnership of University of Pittsburgh & UPMC

Weekly Update – January 17, 2019

www.livercenter.pitt.edu

In this email:

Upcoming Seminars

For a complete list of upcoming PLRC events, please visit our website: www.livercenter.pitt.edu/events

Transplantation Internal Grand Rounds

Friday, January 18, 2019

8:00am

LHAS Auditorium located in Montefiore University Hospital, Seventh Floor.

Dr. Raman Venkataramanan, Professor of Pharmaceutical Sciences and Pathology, will be presenting, "Prevention of Ischemia and Reperfusion Injury – A Pharmacological Approach."

Continental Breakfast will be provided.

PLRC Seminar Series

Tuesday, January 22, 2019
12:00-1:00 p.m.
S123 BST

Allison Formal, MBA , Director, Coulter Program

"Implementing the Coulter Translational Research Model for Success"

&

Philip Brooks, MS, MBA, Entrepreneur in Residence, Innovation Institute

“Inspiring Innovators in Translating their Research to the Marketplace”

This activity has been approved for AMA PRA Category 1 Credit. #6242 Liver Center Seminars.

Pizza will be provided.

PLRC Seminar Series

Tuesday, January 29, 2019
12:00-1:00 p.m.
S123 BST

Yanqiao Zhang, MD
Professor of Integrative Medical Sciences
Northeast Ohio Medical University

"NAFLD: Novel Pathogenic Mechanisms and Potential Therapeutics"

This activity has been approved for AMA PRA Category 1 Credit. #6242 Liver Center Seminars.

Pizza will be provided.
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Registration URL: https://attendee.gotowebinar.com/register/6607572696840938499

For those viewing thru the webinar, please follow the directions below:

- Please Register for the live Webinar ASAP
- After registering, you will receive the confirmation email
- You will be prompt to download the CitrixOnline application and install on your PC or Laptop
- Please contact your local PC Support if you need help installing the application
- Feel free to email Ishtiaque Ahmed (**ahmedi@upmc.edu**) if you have any questions

NOTE Webinar attendees -- use Telephone/Speakerphone and dial-in instead of using desktop/laptop speakers for better audio quality.

Telephone/Speakerphone Audio option is shown right at the Click to Join Webinar prompt.

Liver Seminar

Wednesday, January 30, 2019
12:00-1:00 p.m.
1104 Scaife

Chandrashekhar R. Gandhi, Ph.D., FAASLD
Professor, Gastroenterology, Hepatology and Nutrition

Cincinnati Children's Hospital Medical Center

"Critical Importance of Augmenter of Liver Regeneration Protein in Steatohepatitis"

PLRC SIG - Tumorigenesis

Tuesday, February 5, 2019
12:00-1:00 p.m.
S123 BST

Dr. Sarangarajan Ranganathan - Histology and Molecular Classification of Hepatoblastoma

Dr. Edward Prochownik - Predicting Hepatoblastoma Phenotypes

Pizza will be provided.

Liver Seminar - Dr. Ashutosh Agarwal

Monday, February 11, 2019
10:00-11:00 am
W995 BST (DDI conference room)

Ashutosh Agarwal, PhD

Assistant Professor, Biomedical Engineering Department
University of Miami College of Engineering

Expertise: Cardiovascular Tissue engineering, Microfluidics, Hydrogels, Organs on Chips

PLRC Seminar Series - Dr. Kirsten Sadler Edepli

Tuesday, February 26, 2019

12:00-1:00 pm

S123 BST

Kirsten Sadler Edepli, PhD

Associate Professor, Department of Biology

New York University in Abu Dhabi

Title TBA

This activity has been approved for AMA PRA Category 1 Credit. #6242 Liver Center Seminars.

Pizza will be provided.

Liver Seminar - Dr. Bin Gao

Wednesday, February 27, 2019

12:00-1:00 pm

1104 Scaife

Bin Gao, MD, PhD

National Institute of Health

"Interleukin-22: A Magic Potion for Epithelial Cell Repair from Bench to Bedside"

Liver Cancer Conference

Community Liver Allicance
Liver Cancer Conference

Saturday, March 9, 2019 | 7:30 a.m. - 3:00 p.m.

Wyndham Grand Hotel, Pittsburgh, PA

CME Accredited (see flyer for details)

Please see attached brochure for schedule, speakers, and details.

To register, please visit the CLA website: **http://www.communityliveralliance.org/liver-cancer-conference**

Liver-Themed Gut Club May 2, 2019

Dr. Fasiha Kanwal, the division chief at Baylor, will speak at the May 2, 2019 Pittsburgh Gut Club accredited dinner/lecture series on "The Changing Epidemiology of Liver Cancer."

Liver-related clinical and research trainees are invited to attend the lecture with fee-waived registration. All faculty are invited to attend as well but are required to pay to attend. But, they welcome your trainees as fee-waived participants.

To register for this event, please complete the registration form found in the attached brochure (trainees mark "fee waived" in the payment section), and scan (joj2@pitt.edu) or fax (412-578-9537) it to Joy Merusi by April 15th.

Faculty Highlights – Grants, Publications, Awards

ORIGINAL ARTICLE

An Jiang, Hirohisa Okabe, Branimir Popovic, Morgan E. Preziosi, **Tirthadipa Pradhan-Sundd**, Minakshi Poddar, Sucha Singh, **Aaron Bell**, Steven G. England, Shanmugam Nagarajan, **Satdarshan P. Monga**. Loss of Wnt secretion by macrophages promotes hepatobiliary injury followingadministration of DDC diet. Am J Pathol. 2019 Jan 2. pii: S0002-9440(18)30285-2. doi: 10.1016/j.ajpath.2018.11.010. [Epub ahead of print]

ABSTRACT

Exposure of mice to a diet containing 3,5-diethoxycarbonyl-1, 4-dihydrocollidine (DDC) induces porphyrin accumulation, cholestasis, immune response, and hepatobiliary damage mimicking hepatic porphyria and sclerosing cholangitis. Although β-catenin signaling promotes hepatocyte proliferation, and macrophages are a source of Wnts, the role of macrophage-derived Wnts in modulating hepatobiliary injury/repair remains unresolved. We investigated the effect of macrophage-specific deletion of Wntless (Wls), a cargo protein critical for cellular Wnt secretion, by feeding macrophage-Wls-KO (Mac-KO) and wild-type

littermates (WT) a DDC diet for 14 days. DDC exposure induced Wnt11 up-regulation in macrophages. Mac-KO mice on DDC showed increased serum alkaline phosphatase, aspartate aminotransferase, direct bilirubin, and histological evidence of more cell death, inflammation, and ductular reaction. There was impaired hepatocyte proliferation evidenced by Ki-67 immunostaining, which was associated with decreased hepatocyte β-catenin activation and cyclin-D1 in Mac-KO. Mac-KO also showed increased CD45, F4/80, and neutrophil infiltration after DDC diet, along with increased expression of several pro-inflammatory cytokines and chemokines. Gene expression analyses of bone marrow-derived macrophages from Mac-KO mice and F4/80+ macrophages isolated from DDC-fed Mac-KO livers showed pro-inflammatory M1 polarization. In conclusion, this study shows that a lack of macrophage Wnt secretion leads to more DDC-induced hepatic injury due to impaired hepatocyte proliferation and increased M1 macrophages, which promotes immune-mediated cell injury.

For full text, please **click here**.

ORIGINAL ARTICLE

Pradeep Kumara, **Reben Raeman,** Daniel M.Chopyk, Tekla Smith, Kiran Verma, Yunshan Liu, Frank A.Anania. Adiponectin inhibits hepatic stellate cell activation by targeting the PTEN/AKT pathway. Biochim Biophys Acta Mol Basis Dis. 2018 Oct;1864(10):3537-3545. doi: 10.1016/j.bbadis.2018.08.012.

ABSTRACT

Adiponectin inhibits hepatic stellate cell (HSC) activation and subsequent development of liver fibrosis via multiple mechanisms. Phosphatase and tensin homolog deletion 10 (PTEN) plays a crucial role in suppression of HSC activation, but its regulation by adiponectin is not fully understood. Here, we investigated the effect of adiponectin on PTEN in LX-2 cells, a human cell line and examined the underlying molecular mechanisms involved in adiponectin-mediated upregulation of PTEN activity during fibrosis. PTEN expression was found to be significantly reduced in the livers of mice treated with CCl4, whereas its expression was rescued by adiponectin treatment. The DNA methylation proteins DNMT1, DNMT3A, and DNMT3B are all highly expressed in activated primary HSCs compared to quiescent HSCs, and thus represent additional regulatory targets during liver fibrogenesis. Expression of DNMT proteins was significantly induced in the presence of fibrotic stimuli; however, only DNMT3B expression was reduced in the presence of adiponectin. Adiponectin-induced suppression of DNMT3B was found to be mediated by enhanced miR-29b expression. Furthermore, PTEN expression was significantly increased by overexpression of miR-29b, whereas its expression was markedly reduced by a miR-29b inhibitor in LX-2 cells. These findings suggest that adiponectin-induced upregulation of miR-29b can suppress DNMT3B transcription in LX-2 cells, thus resulting in reduced methylation of PTEN CpG islands and ultimately suppressing the PI3K/AKT pathway. Together, these data suggest a possible new explanation for the inhibitory effect of adiponectin on HSC activation and liver fibrogenesis.

For full text, please **click here**.

ORIGINAL ARTICLE

Kurniawan DW, Jajoriya AK, Dhawan G, Mishra D, Argemi J, **Bataller R**, Storm G, Mishra DP, Prakash J, Bansal R. Therapeutic inhibition of spleen tyrosine kinase in inflammatory macrophages using PLGA nanoparticles for the treatment of non-alcoholic steatohepatitis. J Control Release. 2018 Oct 28;288:227-238. doi: 10.1016/j.jconrel.2018.09.004. Epub 2018 Sep 13. PubMed PMID: 30219279.

ABSTRACT

Non-alcoholic steatohepatitis (NASH) is the leading cause of cirrhosis worldwide and the most rapidly growing indication for liver transplantation. Macrophages are the important cellular component in the inflammatory milieu in NASH. Inflammatory and pro-fibrotic mediators produced by macrophages causes significant tissue injury in many inflammatory diseases. Therefore, inhibition of the inflammatory macrophages would be a promising approach to attenuate NASH. In this study, we studied the implication of SYK pathway in NASH, and investigated PLGA nanoparticles-based delivery of SYK pathway inhibitor as an effective and promising therapeutic approach for the treatment of NASH. We found positive correlation between SYK expression with the pathogenesis of NASH and alcoholic hepatitis in patients. Importantly, SYK expression was significantly induced in M1-differentiated inflammatory macrophages. To inhibit SYK pathway specifically, we used a small-molecule inhibitor R406 that blocks Fc-receptor signaling pathway and reduces immune complex-mediated inflammation. R406 dose-dependently inhibited nitric-oxide release and M1-specific markers in M1-differentiated macrophages. Thereafter, we synthesized PLGA nanoparticles to deliver R406 to increase the drug pharmacokinetics for the efficient treatment of NASH. We investigated the therapeutic efficacy of R406-PLGA in-vitro in differentiated macrophages, and in-vivo in Methionine-Choline-deficient (MCD)-diet induced NASH mouse model. R406-PLGA inhibited M1-specific differentiation markers in RAW and bone-marrow-derived macrophages. In-vivo, R406 and more strongly R406-PLGA ameliorated fibrosis, inflammation and steatosis in mice. R406 and more significantly R406-PLGA reduced ALT, AST, cholesterol and triglyceride plasma levels. These results suggest that delivery of SYK inhibitor using PLGA nanoparticles can be a potential therapeutic approach for the treatment of Non-alcoholic steatohepatitis.

For full text, please **click here**.

ORIGINAL ARTICLE

Inomata K, Tajima K, Yagi H, Higashi H, Shimoda H, Matsubara K, Hibi T, Abe Y, Tsujikawa H, Kitago M, Shinoda M, Obara H, Itano O, **Soto-Gutierrez A**, Kitagawa Y. A Pre-Clinical Large Animal Model of Sustained Liver Injury and Regeneration Stimulus. Sci Rep. 2018 Oct 9;8(1):14987. doi: 10.1038/s41598-018-32889-y. PubMed PMID: 30301901; PubMed Central PMCID: PMC6177392.

ABSTRACT

A feasible large animal model to evaluate regenerative medicine techniques is vital for developing clinical applications. One such appropriate model could be to use retrorsine (RS) together with partial hepatectomy (PH). Here, we have developed the first porcine model using RS and PH. RS or saline

control was administered intraperitoneally to Göttingen miniature pigs twice, two weeks apart. Four weeks after the second dose, animals underwent PH. Initially, we tested different doses of RS and resection of different amounts of liver, and selected 50 mg/kg RS with 60% hepatectomy as our model for further testing. Treated animals were sacrificed 3, 10, 17 or 28 days after PH. Blood samples and resected liver were collected. Serum and liver RS content was determined by Liquid Chromatograph-tandem Mass Spectrometer. Blood analyses demonstrated liver dysfunction after PH. Liver regeneration was significantly inhibited 10 and 17 days after PH in RS-treated animals, to the extent of 20%. Histological examination indicated hepatic injury and regenerative responses after PH. Immunohistochemical staining demonstrated accumulation of Cyclin D1 and suppression of Ki-67 and PCNA in RS-treated animals. We report the development of the first large animal model of sustained liver injury with suppression of hepatic regeneration.

For full text, please **click here**.

REVIEW ARTICLE

Satdarshan P. Monga and **Tirthadipa Pradhan-Sundd**. "Blood Bile Barrier: Morphology, Regulation and Pathophysiology." Gene Expression: The Journal of Liver Research. **https://doi.org/10.3727/105221619X15469715711907**. January 2019.

ABSTRACT

The term blood bile barrier (BBlB) refers to the physical structure within a hepatic lobule that compartmentalizes and hence segregates sinusoidal blood from canalicular bile. Thus, this barrier provides physiological protection in the liver, shielding the hepatocytes from bile toxicity and restricting the mixing of blood and bile. BBlB is primarily composed of tight junctions; however, adherens junction, desmosomes, gap junctions and hepatocyte bile transporters also contribute to the barrier function of the BBlB. Recent findings also suggest that disruption of BBlB is associated with major hepatic diseases characterized by cholestasis and aberrations in BBlB thus may be a hallmark of many chronic liver diseases. Several molecular signaling pathways have now been shown to play a role in regulating the structure and function and eventually contribute to regulation of the BBlB function within the liver. In this review, we will discuss the structure and function of the BBlB, summarize the methods to assess the integrity and function of BBlB, discuss role of BBlB in liver pathophysiology and finally, discuss the mechanisms of BBlB regulation. Collectively, this review will demonstrate the significance of the BBlB in both liver homeostasis and hepatic dysfunction.

For full text, please **click here**.

PLRC Pilot & Feasibility RFA

The Pittsburgh Liver Research Center is pleased to announce the 2019 Request for Applications for Pilot/Feasibility Grants. The grants will fund new initiatives and/or support new investigators who are pursuing liver-related research that should lead to R01-type funding or other extramural support at a later date. For more information, please visit the website: **http://www.livercenter.pitt.edu/plrc-grants**

NIH Funding Opportunity

Innovative Molecular and Cellular Analysis Technologies for Basic and Clinical Cancer Research (R21 Clinical Trials Not Allowed)
(RFA-CA-19-019)
National Cancer Institute

Pittsburgh Liver Research Center
200 Lothrop St. | Pittsburgh, PA 15261

PITTSBURGH LIVER RESEARCH CENTER
A partnership of University of Pittsburgh & UPMC

Pilot / Feasibility Application Process
Applications due March 15, 2019

The Pittsburgh Liver Research Center is pleased to announce the 2019 Request for Applications for Pilot/Feasibility Grants. The grants will fund new initiatives and/or support new investigators who are pursuing liver-related research that should lead to R01-type funding or other extramural support at a later date.

Pilot/Feasibility grants:

1. Are one-year awards for liver-related research. Funds can be used for reagents, animals, and core services, but not for equipment or travel. Under special circumstances and with proper justification, salary support may be considered. No indirects will be given. All funds must be used for the conduct of research. Funding will run from September 1, 2019 – August 31, 2020.
    a. $25,000 grant(s) will be awarded to individual applicants. The PLRC will fund between four and six (4-6) of these applications.
    b. $50,000 grant(s) will support a team of at least two investigators—a practicing physician and a basic scientist—working together to answer an important question pertaining to liver health and disease. The synergy and/or complementarity between the two investigators and their projects should be clearly visible. This award is intended to promote team science and/or translational science. The PLRC will fund one (1) of these applications.
2. Are for one year; in rare cases, awardees may apply for a second year of funding. Applicants applying for a second year of funding must provide a report of their progress to date and will be considered on a competitive basis with the entire pool of applicants.
3. Provide support for investigators to collect preliminary data sufficient to support a future extramural grant application for independent research and/or to test a novel hypothesis.
4. Encourage and support dissemination of research via peer-reviewed publication.
5. Are NOT intended for:
    a. Bridge funding
    b. Large projects by established investigators
    c. Supporting or supplementing ongoing funded research of an investigator.

Expected outcomes:

1. The funds will be distributed in two disbursements. The first will be September 1, 2019. At the midpoint of the funding period, the PI(s) will submit a brief mid-year report; once the report has been approved, the second half of the funds will be disbursed.

2. At around the mid-point of the award, the PI(s) will present at a regularly scheduled PLRC seminar, and it will be expected that the PI(s) will discuss her/his work on the P/F project.

3. At the end of the funding period, it would be ideal for the PI(s) to have generated sufficient high-quality data to publish in a peer-reviewed scientific journal.

4. At the end of the funding period, it would be optimal for the PI(s) to have sufficient high-quality preliminary data to apply for extramural R01 (or similar) funding for the continuation of the project.

5. At the end of the funding period and using the data generated during the Pilot / Feasibility award period, the awardee(s) will submit to the PLRC one of the following: (1) a project completion report, or (2) a publication, or (3) a copy of the R01.

6. PLRC support shall be acknowledged in all relevant publications and presentations. A statement related to the acknowledgment can be obtained from the PLRC Administrator (Ann Vinski vinskiam@upmc.edu).

7. The PLRC Director is available to discuss the progress of the project and offer other relevant scientific advice. The PLRC Director will be able to provide any supporting documents or letters necessary for the preparation of a successful R01 (or similar) application.

8. PIs will attend and participate in the PLRC Enrichment activities, including monthly seminars and relevant Special Interest Group roundtables.

Eligibility:
All academic full-time faculty, including Instructors, Research Assistant Professors, and Assistant Professors, who are eligible to apply as PI for extramural NIH R01 funding and who are affiliated with the University of Pittsburgh and/or UPMC are eligible to apply. Projects will be considered on any aspect of fundamental or applied research relating to basic liver function, liver pathophysiology, or clinically relevant areas. Projects that will utilize the PLRC Scientific Cores will be given preference. Applicants must fall into one of the following categories of eligibility. Please note that this is a tiered priority scale, with preference being given to junior investigators.

- Track 1 (N). Junior investigators without independent grant support (excluding career development awards) seeking to establish independence in the field of liver research. ***This category of applicant will be given preference.***

- Track 2 (EN). Established investigators with independent grant support—past or present—who have not been involved in liver research and who wish to develop new research directions related to the liver.
- Track 3 (E). Established investigators working in liver-related research who wish to begin a new project representing a major departure from their previous NIH-funded research.

Application Process:

1. PIs who intend to apply for the grant should send an email to Ann Vinski (vinskiam@upmc.edu) no later than **February 15, 2019**. The email only needs to state the PI's name(s) and that they intend to apply for a grant.

2. Applications should follow the format of a new NIH R01 Grant, using NIH application forms (PHS 398) and must include the following:

   a. Title and abstract

   b. Detailed budget for the proposal. **Please be in contact with your departmental grant administrator for assistance in budget planning.** Effort is required of the principal investigator and must be reflected on the budget page. This effort should be cost shared by the department or other entity that will support such effort at the non-federal fringe rates.

   c. NIH Biosketch for the PI (5 page limit); please use the format that expires in 2020.

   d. Specific Aims (1 page limit).

   e. Research Strategy (6 page limit). The final section of the Research Strategy must be entitled "PLRC Core Use." This section will include a description of projected PLRC Core use during the project period. It is expected that each funded project will use at least one of the PLRC Research Cores. Please contact Ann Vinski (vinskiam@upmc.edu) for details.
   f. Bibliography (no page limit).
   g. All institutional regulatory approvals for human, tissue, and animal use should be submitted with the application. If the relevant approvals have not yet been received, the applicant should indicate the date on which the approvals were requested.

3. Applications do not require institutional internal review or Dean's signature.

4. **All documents should be combined into a single pdf file and emailed to Ann Vinski (vinskiam@upmc.edu) no later than March 15, 2019.**

Review and Decision Process:

1. Each application will be peer reviewed by at least two reviewers, one from the PLRC leadership, and one external reviewer.

2. Following initial review, a group of semi-finalists will be invited to present their proposals, in person, before the Executive Committee of the PLRC and a panel of external reviewers. The PI is required to present in person to be considered for possible funding. The presentations will be scheduled for the week of April 15, 2019.

3. The applications will be scored based on scientific merit and NIH fundability as deemed by the PLRC review panel. Emphasis will be placed on projects that have potential for NIDDK-supported liver research.

4. Applicants will be notified of award decisions no later than May 1, 2019. The Notice of Grant Award (NGA) will outline the expected outcomes (see above).

5. Grants begin September 1, 2019.

Liver Cancer Conference
March 9, 2019
Wynhdam Grand Hotel
Pittsburgh, PA

This program is directed to providers, patents and caregivers. Concurrent educational sessions will be held for hepatologists, gastroenterologists, oncologists, primary care physicians and other health care providers involved in the management of patients with liver cancer. A separate session will be geared towards patients and their caregivers.

Program Overview

The goal of this course module is to help clinicians and other service providers understand the management of Hepatocellular Carcinoma in the US population, innovations in therapies and advances in research and development.

Learning Objectives

At course completion, attendees should be able to:

Increase Knowledge
Understand the molecular classification of HCC

Understand the multidisciplinary approach to management of HCC

Competency
Define the mechanisms that lead to the development of hepatocellular cancer (HCC)

Performance
Discuss the available evidence-based data on promising treatment options for advanced HCC

Discuss the advances in research and development

Faculty Listing

Abhi Humar, MD
Chief, Division of Transplantation
Department of Surgery
UPMC Starzl Transplant Institute
Pittsburgh, PA

David Geller, MD
Director, UPMC Liver Cancer Center
Pittsburgh, PA

Kevin McCluskey, MD
Department of Radiology
Allegheny Health Network
Pittsburgh, PA

Alexander Kirichenko, MD
System Director, SRS/SRT Programs
Allegheny Health Network
Pittsburgh, PA

Dulabh K. Monga, MD
Program Director
Hematology Oncology Fellowship
Assistant Professor of Medicine
Temple University School of Medicine
Allegheny Health Network
Pittsburgh, PA

Paul Monga, MD
Pittsburgh Liver Research Center,
University of Pittsburgh, School of
Medicine and UPMC
Pittsburgh, PA

Anuradha Krishnamurthy, MD
Pittsburgh Liver Research Center,
University of Pittsburgh, School of
Medicine and UPMC
Pittsburgh, PA

Suzanna Masartis,
Executive Director
Community Liver Alliance
Pittsburgh, PA

Jaideep Behari, MD, PhD
Transplant Hepatology
UPMC Center for Liver Diseases
Pittsburgh,PA

Ramon Bataller, MD PhD
Division of Gastroenterology, Hepatology and Nutrition
UPMC Center for Liver Diseases
Pittsburgh, PA

Schedule

7:30 a.m. Registration & Breakfast

8:00 a.m. **Welcome and Overview**, Dulabh Monga, MD

8:10 a.m. **Cellular and Molecular Basis of Liver Cancer**
Satdarshan (Paul) Monga, MD
Pittsburgh Liver Research Center,
University of Pittsburgh, School of
Medicine and UPMC
Pittsburgh, PA

8:45 a.m. **Why Do People Get HCC?**
Jaideep Behari, MD, PhD
Transplant Hepatology
UPMC Center for Liver Diseases
Pittsburgh, PA
UPMC Center for Liver Diseases

9:15 a.m. **Etiology, Surveillance and Diagnosis of HCC**
Ramon Bataller Alberola MD, PhD
Division of Gastroenterology, Hepatology and Nutrition
UPMC Center for Liver Diseases
Pittsburgh, PA

Surgical Management of HCC

9:45 a.m. **Transplantation**
Abhi Humar, MD
Chief, Division of Transplantation in the Department of Surgery
UPMC
Pittsburgh, PA

10:15 a.m. **Resection**
David Geller, MD
Director, UPMC Liver Cancer Center
Pittsburgh, PA

10:45 a.m. Break

Radiation and Medical Management of HCC

11:00 a.m. **TACE/Y-90**
Kevin McCluskey, MD
Department of Radiology
Allegheny Health Network
Pittsburgh, PA

11:30 a.m. **Liver Directed Radiation**
Alexander Kirichenko, MD
System Director, SRS/SRT Programs
Allegheny Health Network
Pittsburgh, PA

12:00 p.m. **Medical Therapies**
Dulabh K. Monga, MD
Program Director
Hematology Oncology Fellowship
Assistant Professor of Medicine

Temple University School of Medicine
Allegheny Health Network
Pittsburgh, PA

12:30 p.m. **Lunch and Advocacy Update**
Suzanna Masartis
Executive Director
Community Liver Alliance
Pittsburgh, PA

1:00 p.m. **HCC Research `**
Anuradha Krishnamurthy, MD
Pittsburgh Liver Research Center, University of Pittsburgh, School of Medicine and UPMC
Pittsburgh, PA

Paul Monga, MD
Pittsburgh Liver Research Center, University of Pittsburgh, School of Medicine and UPMC
Pittsburgh, PA

3:00 p.m. Adjourn

CME Accreditation and Designation Statement

This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint provider ship of University of Pittsburgh School of Medicine and the Community Liver Alliance. The University of Pittsburgh School of Medicine is accredited by the ACCME to provide continuing medical education for physicians.

The University of Pittsburgh School of Medicine designates this live activity for a maximum of 6.0 *AMA PRA Category 1 Credits™.* Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Other health care professionals are awarded 0.6 continuing education units (CEU's) which are equal to 6.0 contact hours.

Faculty Disclosure

All individuals in a position to control the content of this education activity including members of the planning committee, speakers, presenters, authors, and/or content reviewers have disclosed all relevant financial relationships with any entity producing, marketing, re-selling, or distributing health care goods or services, used on, or consumed by, patients.

The following relevant financial relationships were disclosed:
Paul Monga, MD, Grant Research Support from Abbvie and Cognizant Communications

Ramon Bataller, MD, PhD, Paid Seminar, Echosens

Jaideep Behari, Grant Research Support, General Electric Corp.

No other planners, members of the planning committee, speakers, presenters, authors, content reviewers and/or anyone else in a position to control the content of this education activity have relevant financial relationships to disclose.

Acknowledgement of Commercial Support:

We gratefully acknowledge Exhibitors support from the following to support this activity:

Bayer
Allegheny Health Network
BMS

Pittsburgh Gut Club

Learning Objectives:

- Review state-of-the-art information on the pathogenesis of gastrointestinal and liver diseases
- Review the latest procedural and diagnostic advancements for gastroenterology practice
- Identify current treatments available for GI diseases and discuss future advancements

Sponsored by:

Division of Gastroenterology, Hepatology and Nutrition
University of Pittsburgh School of Medicine
UPMC Center for Continuing Education in the Health Sciences

Course Director:

Robert E. Schoen, MD, MPH
Professor of Medicine and Epidemiology
Chief, Division of Gastroenterology, Hepatology and Nutrition
University of Pittsburgh School of Medicine

Continuing Education Credit:

The University of Pittsburgh School of Medicine is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians. The University of Pittsburgh School of Medicine designates this live activity for a maximum of **1.5** *AMA PRA Category 1 Credit(s)™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity. Other health care professionals are awarded **.015** continuing education units (CEU's) which are equal to **1.5** contact hours.

The University of Pittsburgh is an affirmative action, equal opportunity institution.

Pittsburgh Gut Club

Contact Information:

Joy Jenko Merusi
Division of Gastroenterology, Hepatology and Nutrition
University of Pittsburgh | UPMC
Medical Arts Building, 4th Floor
3708 Fifth Avenue • Pittsburgh, PA 15213

E-mail: **joj2@pitt.edu**
Phone: **412.578.9518** or **412.578.9515**
Fax: **412.578.9537**

Register and Become a Gut Club Member Today

New in 2019:

Free Parking for Gut Club Members

Pittsburgh Gut Club

2019 Schedule and Registration

6:00 pm to 8:15 pm
The University Club
123 University Place • Pittsburgh, PA

Thursday, March 28, 2019
Endoscopic Treatments of Obesity
Reem Sharaiha, MD, MSc

Thursday, May 2, 2019
The Changing Epidemiology of Liver Cancer
Fasiha Kanwal, MD, MSHS

Monday, September 23, 2019
Are Newer Biologics Better Than Our Old Ones?
Maria T. Abreu, MD

Pittsburgh Gut Club – 2019 Schedule of Events

March 28, May 2 and September 23, 2019

6:00 pm — Reception
7:00 pm to 8:15 pm — Dinner and Program
The University Club — www.uc.pitt.edu

The Pittsburgh Gut Club is a gastroenterology education and networking series designed to bring novel and relevant subspecialty advancements to the Greater Pittsburgh region. All gastroenterologists, physicians and allied health professionals are encouraged to attend.

Participants are asked to register for the entire series @ $150/person and become Gut Club members. The deadline for this discounted membership fee is **March 28, 2019**.

Gut Club Member Benefits:

- Discounted admission to all three 2019 Gut Club dinner programs
- Recognition on the handouts for each lecture
- E-mail reminders for all lectures
- Support of this education and networking initiative in our region.
- **NEW in 2019:** Free parking for **Gut Club members** at the University of Pittsburgh Soldiers & Sailors Memorial Hall lot (below Soldiers & Sailors and a half block from the University Club). Parking tickets will be validated at the Gut Club registration desk. This free-parking benefit is applicable for the Soldiers & Sailors lot *only*.

Non-member, per-meeting registration is offered at $75/lecture.

GI and hepatology fellows and other trainees may attend for free but must pre-register.

Thursday, March 28, 2019

Endoscopic Treatments of Obesity

Reem Sharaiha, MD, MSc
Associate Professor of Medicine
Advanced Endoscopy & Metabolic Endoscopy
Division of Gastroenterology and Hepatology
Weill Cornell Medicine
New York, NY

Thursday, May 2, 2019

The Changing Epidemiology of Liver Cancer

Fasiha Kanwal, MD, MSHS
Professor of Medicine
Chief, Gastroenterology and Hepatology
Baylor College of Medicine
Houston Veterans Affairs HSR&D Center of Excellence
Michael E. DeBakey VA Medical Center
Houston, TX

Monday, September 23, 2019

Are Newer Biologics Better Than Our Old Ones?

Maria T. Abreu, MD
Director, Crohn's & Colitis Center
Vice chair of Research, Department of Medicine
Martin Kalser Chair in Gastroenterology
Professor of Medicine, Microbiology, and Immunology
University of Miami Miller School of Medicine
Miami, FL

Pittsburgh Gut Club – Registration Form

Sign up for:	Price:
☐ Pittsburgh Gut Club MEMBERSHIP Admission for all 3 dates (deadline 3/28/19) Includes free parking	$150
☐ Dr. Sharaiha on Thursday, March 28	$ 75
☐ Dr. Kanwal on Thursday, May 2	$ 75
☐ Dr. Abreu on Monday, September 23	$ 75
☐ Fee Waived for Trainees	$ 0

List dates(s) of attendance: _____

Total $_____

First Name

Last Name

Degree (MD, DO, PA-C, RN, etc.)

Address

City State ZIP

E-mail (required)

Phone

Method of Payment:

☐ Check (payable to "University of Pittsburgh")
☐ Visa
☐ MasterCard
☐ American Express

Credit Card # Exp. Date

Signature CVV Code

To Register: Scan, Fax or Mail this Form

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