2017 SEASR Annual Meeting - June 7-9, 2017
Sheraton Tampa Riverwalk Hotel, Tampa, FL

Welcome 2017 SEASR Conference registrants!

As President of the Southeastern Association of Shared Resources (SEASR) I want to thank you for registering for the 2017 SEASR Conference. The conference will be held at the Sheraton Tampa Riverwalk Hotel and begins on Wednesday (6/7) with the opening reception at the Columbia Museum. The Sheraton Tampa Riverwalk Hotel is located at 200 N Ashley Dr. Tampa, FL.

The organizing committee is excited to bring to you a number of professional development, scientific, and networking sessions that we hope meet your needs as a core director, administrator, manager, or staff member. Our strong vendor turnout will allow us to showcase the latest technologies and has also permitted us to offer free meeting registration. If you registered prior to this free meeting registration offer, you will be receiving a refund shortly.

Please visit our meeting website for the latest schedule of events:

http://seasr.abrf.org/program-schedule

Below is some logistical information that may help you when you arrive.

Transportation and Parking:
There is Blue One shuttle service available to and from the Sheraton Tampa Riverwalk Hotel and Tampa International Airport. The shuttle is first-come, first-served. Please visit the Blue-One website to schedule your shuttle: https://blueonetransportation.com/

Discounted overnight valet parking is available for conference attendees at the Sheraton for $15 a night.

Badge Pickup:
You may pick up your badge at the SEASR meeting registration desk located in the Riverwalk Foyer from 11 am - 3 pm on Wednesday (6/7) or from 7:30 am - 2 pm on Thursday (6/8). If you are attending the opening reception, we encourage you to pick up your badge on Wednesday as you will receive your drink tickets at that time.

Pre-meeting Workshop:
If you arrive early on Wednesday, please join Pall FortéBio for a free workshop from noon-4 pm at the Sheraton. Lunch will be provided and you will be able to take part in an interactive roundtable discussion regarding best practices for label-free assays, analysis, and troubleshooting. Visit the meeting homepage for more information and to register.

http://www.fortebio.com/workshops/tampa-2017/?utm_medium=email&sslid=MzU0s7AwMzczNjUFAA&sseid=MzQ1NbIwNDYwtQQA&jobid=cec2a4f7-9eea-4092-9588-4171200b5b62

Opening Reception:
The Opening Reception will take place at the Columbia Museum on Wednesday evening from 6-9 pm. We will be serving complimentary beverages and light food. Be sure to stay until the end of the reception when the museum will feature a live flamenco dancer performance! The Columbia Museum is located at 2029 E 7th Ave. in Tampa.

You may choose to travel to the Columbia Museum from the Sheraton via Streetcar. An unlimited use, one day pass is $5 and can be purchased on board the Streetcar. There are fare vending machines located at all of the stations as well. In addition, you can download the "Flamingo Fares" app" and purchase a one day pass. The closest Streetcar stop to the Sheraton is at the corner of E Whiting St and N Franklin St., which is about 4 blocks from the hotel. Exit the Streetcar between N 19th St. and N 20th St. and walk about 2 blocks to the Columbia Museum. A map can be accessed by clicking here:

https://www.google.com/maps/d/viewer?ll=27.951258498986288,-82.4475324&z=15&mid=1Yo0ThrNqZWBaOolkHQOQM9I66Qw

Please contact the SEASR Organizing Committee (oc@seasr.abrf.org) if you have any questions. I look forward to seeing you in Tampa!

Sincerely,

Kim Dahlman, PhD
SEASR President
Director, Innovative Translational Research Shared Resource
Vanderbilt-Ingram Cancer Center
Assistant Professor, Department of Cancer Biology
Vanderbilt University

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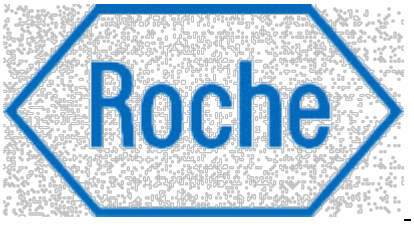

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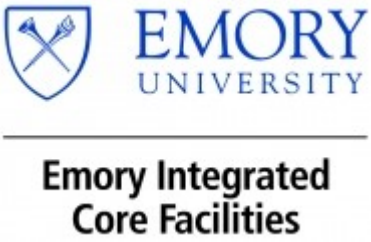

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Program Schedule

Wednesday, June 7

Start	End	Event	Speaker(s)	Location
11 am	3 pm	Registration Desk Open		Riverwalk Foyer
5 pm	12 am	Exhibitor set up		Riverwalk North
6 pm	9 pm	Opening Reception		Columbia Museum

Thursday, June 8

Start	End	Event	Speaker(s)	Location
7 am	8 am	Breakfast		Bayshore East
7:30 am	2 pm	Registration Desk Open		Riverwalk Foyer
7:30 am	8:30 am	Sponsored Breakfast Workshop	NanoTemper **Studies of Molecular Interactions using MicroScale Thermophoresis and Dye-free Stability Characterization using nanoDSF**	Bayshore West
8:30 am	9 am	Opening Remarks	Kimberly Dahlman, PhD President SEASR Vanderbilt University Susan DeCourcey, Executive Director of ABRF	Riverwalk South
9 am	10 am	Keynote Lecture: ***Personalized Cancer Medicine: Progress, but a long way still to go***	Howard McLeod, PharmD H. Lee Moffitt Cancer Center & Research Institute	Riverwalk South
10 am	10:30 am	Coffee Break		Riverwalk North
10 am	7 pm	Exhibit Hall Open (Vendor show)		
10:30 am	11:30 am	Plenary Talk: ***Landscape of core facilities***	Christine O'Connell, MMSc H. Lee Moffitt Cancer Center & Research Institute	Riverwalk South
11:30 pm	1 pm	Lunch		Bayshore East
12 pm	1 pm	Sponsored Lunch Workshop	Beckman Coulter **Dare to explore the full Spectrum: NUV to IR**	Bayshore West

1:15 pm	3:15 pm	Breakout Session: ***Professional Development Strategies to Launch your Career to the Next Level*** **-Core Directors**	Claudius Mundoma, PhD, MBA Florida State University	Riverview Room
1:15 pm	3:15 pm	Breakout Session: ***Professional Development Strategies to Launch your Career to the Next Level*** **-Core Staff**	Kimberly Dahlman, PhD Vanderbilt University	Bayshore West
3:15 pm	4:15 pm	Coffee Break		Riverwalk North
4:15 pm	5:15 pm	Breakout Session: ***Measuring Shared Resource Impact***	Edward Seijo, MS H. Lee Moffitt Cancer Center & Research Institute; John Schatzle, PhD H. Lee Moffitt Cancer Center & Research Institute; Michael Zwick, PhD Emory University School of Medicine; Thayumanasamy Somasundaram, PhD Florida State University	Bayshore West
4:15 pm	5:15 pm	Panel Discussion: ***Best Practices in NGS Library Generation***	Bill Farmerie, PhD University of Florida; David Moraga, PhD University of Florida; Sean Yoder, MS H. Lee Moffitt Cancer Center & Research Institute	Riverview Room
5:30 pm	7 pm	Poster Session & Wine and Hors D'oeuvres Reception		Riverwalk North and Riverwalk Foyer

Friday, June 9

Start	End	Event	Speaker(s)	Location
7 am	8 am	Breakfast		Bayshore East
7:30 am	8:30 am	Sponsored Breakfast	Qiagen **QIAseq miRNA: An unbiased, gel-free workflow and superior mapping rates to speed cancer biomarker discovery**	Bayshore West

8 am	12 pm	Exhibit Hall Open (Vendor show)		Riverwalk North
8:30 am	9:30 am	Keynote Lecture and Panel Discussion: ***SouthEast Enrollment Center***	Michael E. Zwick, PhD Emory University School of Medicine; Priscilla Pemu, MD, MS FACP Morehouse School of Medicine; Rosario Isasi, JD, MPH University of Miami; François Modave, PhD University of Florida	Riverwalk South
9:30 am	10:30 am	Plenary Talk: ***CAR T cell development, production, and clinical application: the academic perspective***	Marco Davila, MD, PhD H. Lee Moffitt Cancer Center & Research Institute	
10:30 am	11 am	Coffee Break		Riverwalk North
11:15 am	12:15 pm	Breakout Session: ***Project Management***	Robert Carnahan, PhD Vanderbilt University; David Blum, PhD University of Georgia	Bayshore West
11:15 am	12:15 pm	Breakout Session: ***Experiences in Implementing a New CRISPR Core Service at Emory***	Christopher Raymond, PhD Emory University School of Medicine	Riverview Room

Speakers

Melissa Avedon, B.S., joined Moffitt Cancer Center in October of 2015 and is the Project Manager for the Research Institute's Basic and Population Sciences Shared Resources cores, where she utilizes her skills in building, optimizing, and expanding teams, systems, services, and processes to support evolving organizational needs.

With over 20 years of project management expertise in the pharmaceutical and healthcare fields, she coordinates project communication and flow between assigned cores, collaborating with investigators, and establishes and coordinates the processes by which teams manage hundreds of research projects.

Prior to Moffit, Ms. Avedon was with Nationwide Children's Hospital in Columbus, OH, where she served as Lead Clinical Outreach Coordinator with the NCI-funded The Cancer Genome Atlas (TCGA) project for three years. While there, she managed communications, training and clinical projects with over 60 collaborating teams worldwide.

Ms. Avedon earned her B.S. degree in molecular and cell biology with a concentration in genetics from the University of Connecticut. She earned her Project Management Professional (PMP) certification in 2008, and managed research projects in an early discovery DNA sequencing core and in clinical pharmacogenomics with Pfizer for over fifteen years.

With additional training and certification as a professional certified coach in 2009 through The Institute for Professional Excellence in Coaching (iPEC), she integrates expertise in biological research, project management and communications to streamline and enhance Moffitt's research project collaborations.

William G. Farmerie, PhD currently serves as the Bioinformatics Core Scientific Director at the University of Florida, Interdisciplinary Center for Biotechnology Research (ICBR). He received his B.S. degree in Biological Sciences in 1973 at The Florida State University, and in 1980 was awarded a Ph.D. in Biomedical Sciences from the University of Tennessee. Prior to joining the University of Florida, Dr. Farmerie held Research Associate positions at the University of Michigan where his research involved gene transcription regulation in DNA tumor viruses (Polyoma), and at the University of North Carolina at Chapel Hill where his research

focused on HIV-1 proteinase. Dr. Farmerie joined ICBR in1992 as the Director of the Recombinant Protein Expression Core. In 1998, he became the founding Director of the ICBR Large-Scale DNA Sequencing Core. He evaluated, acquired, and enabled laboratory robotics and advanced technologies for production-oriented Sanger capillary DNA sequencing while building extensive computational resources for DNA sequence analysis. He founded the ICBR Microarray Core, and established the ICBR Bioinformatics Core. The ICBR Large-Scale DNA Sequencing Core acquired one of the first second-generation DNA sequencing platforms (454 GS-20), and shifted all DNA sequence production to NGS instrumentation. He was responsible for expanding ICBR DNA sequencing capabilities and acquired an early third-generation DNA sequencing instrument, the Pacific Biosciences RS. He currently functions as the primary bioinformatics resource for all Pacbio DNA sequence mapping and assembly projects.

Rosario Isasi, J.D., M.P.H. is a Research Assistant Professor at the Dr. John T. Macdonald Foundation Department of Human Genetics at the University of Miami Miller School of Medicine. She holds multiple appointments, including at the Institute for Bioethics and Health Policy, within which she serves as Director of their Genetics, Ethics, and Policy Program, as well as the John P. Hussman Institute for Human Genomics and the Interdisciplinary Stem Cell Institute.

Prof. Isasi's research is devoted to identifying and analyzing the social, ethical and policy dimensions of novel and disruptive genetic technologies. She has built an international reputation as a scholar with particular expertise in the area of international comparative law and ethics regarding genomics and regenerative medicine.

She holds many leadership roles in major international initiatives. Prof. Isasi was recently named the President's International Fellow of the Chinese Academy of Sciences (CAS). She also serves as the Ethics/Policy Advisor of the European Commission's European Human Pluripotent Stem Cell Registry (hPSC^{REG}), is a member of the Ethics Advisory Board of the "Vanderbilt-Miami-Meharry Center of Excellence in Precision Medicine and Population Health" and the American Society for Human Genetics (ASHG) Task Force on "Gene Editing". Prof. Isasi Chairs of the International Stem Cell Forum Ethics (ISCF) Working Party, a consortium of funding agencies for regenerative medicine.

Howard McLeod, PharmD is Medical Director of the DeBartolo Family Personalized Medicine Institute at the Moffitt Cancer Center. He is chair of the Department of Individualized Cancer Management and a State of Florida Endowed Chair in Cancer Research. He is also a Senior Member of the Division of Population Sciences and Professor at the University of South Florida. Dr McLeod is chair of the NHGRI eMERGE network external scientific panel and a recent member of the FDA committee on Clinical Pharmacology and the NIH Human Genome Advisory Council. Since 2002, Dr McLeod has been vice chair for Pharmacogenomics for the major NCI clinical trials group, overseeing the largest oncology pharmacogenomics portfolio in the world. Dr McLeod is also a 1000 talent scholar of China and a Professor at Central South University in Changsha, China. Howard has published over 500 peer reviewed papers on pharmacogenomics, applied therapeutics, or clinical pharmacology and continues to work to advance individualized medicine.

Christine O'Connell, MMSc serves as the Senior Director of Laboratory Research Operations at the H. Lee Moffitt Cancer Center & Research Institute. Ms. O'Connell has 28 + years of experience in Research Administration. In 1986 Ms. O'Connell received an MMSc degree in Immunology from Emory University (Atlanta, Ga, USA). In addition she has received post-graduate training in the area of Health Policy and Management. In 2007, Ms. O'Connell completed a two-year fellowship at the Advisory Board, an organization focused on healthcare operations and leadership best practices. Ms. O'Connell joined Moffitt in 1988 and has held several positions within research administration with increasing responsibility. In her current role, as Sr. Director Laboratory Research Operations, Ms. O'Connell provides leadership and oversight to the laboratory based shared resources. Duties and responsibilities include the administrative oversight of operating and capital budgets, purchasing, chargeback/fee schedule development and implementation, strategic planning, and the facilitation of the Core Leadership Committee. In addition to proving leadership to Moffitt's Shared Resources, Ms. O'Connell is responsible for the oversight of the Research Environmental Health & Safety Department and research space planning and management.

Priscilla E. Pemu, MD., MS.,FACP completed her MBBS degree in 1988 from the university of Benin in Benin City, Nigeria. Subsequently, she obtained a post graduate diploma in Anesthesia in 1991 and practiced as an anesthetist at the University of Benin Teaching Hospital. Her residency and fellowship training in Anesthesia with the National Postgraduate Medical College of Nigeria lasted from 1991-1997. She also maintained a faculty position with the College of Medicine, University of Benin over the same period. Once she obtained her fellowship in Anesthesia with the National Postgraduate medical College of Nigeria in 1997, she was appointed as Consultant Anesthetist at the University of Benin Teaching Hospital and Lecturer I with the University.

Once she relocated to Atlanta, she completed residency training in Internal Medicine in 2002. She has been continuously board certified in Internal Medicine since 2002. She has maintained an active practice in in-patient care of the complex medical patient (hospitalist medicine) and she continues to precept residents in Ambulatory internal medicine.

Since 1998, Dr Pemu has been engaged in clinical research with additional training and certification through the Master of Science in Clinical Research program here at Morehouse School of Medicine in 2004. She has conducted clinical trials as a research coordinator, sub investigator and Principal Investigator(15 studies) in Hypertension and type 2 diabetes mellitus and dementia.

Activities: In addition to her research, teaching and clinical activities; Dr Pemu oversees participant recruitment and research recruitment database development by linking efforts in research volunteer engagement both in person and online. She also oversees community outreach through the mobile research unit and connections between the electronic medical records systems and our volunteer research participant database. At present, the research participant database has 2200 individuals; predominately AA. The clinical data repository currently has over 100,000 individual records. As part of her role in the R Center/ACTSI; Dr Pemu oversees staffing and participant throughput for research protocols.

Research Interests/Scholarship: As an internist, my goal is to improve the health of all patients similar to those that I encounter in my practice. The complex interplay of patient, physician, practice setting, environmental and psychosocial factors in perpetuating disparities in health outcomes led to my interest and work with the Community Physicians Network. In the past 10years, we have developed a successful partnership based on a shared vision for improved care and outcomes among minority and underserved patients with Community Physicians who are part of the Morehouse Community Physicians Network (CPN). Overall focus has been on identifying gaps in treatment and outcomes and opportunities for improvement. As medical Director of the Community Physicians'

Network (CPN), I am responsible for planning and executing research and quality improvement initiatives. I have 24 publications in this area and my work has been cited 231 times. We developed a system and method for chronic illness care now known as Health360x (www.Health360x.org); an application that is available on the internet and mobile platforms. We have demonstrated improvements in self-management skills and clinical outcomes among high risk diabetic African Americans in the workplace, faith-based setting and ambulatory clinical practice. Current focus is to embed this technology into routine clinical practice. The Morehouse Choice ACO practices serve as our partner in this effort. As part of the American Heart Association Strategically Focused Research Networks, I am Co-Leading the Clinical project that tests the role of resiliency in resistance to adverse cardiovascular disease outcomes.

Christopher Raymond, Ph.D. is currently the Director of the Mouse Transgenic and Gene Targeting Core facility at Emory University, where he leads a team providing a wide-variety of mouse-related services. Prior to joining Emory in 2016, Dr. Raymond spent a decade in the pharmaceutical industry at Merck & Co, Inc., where he held a number of positions of increasing responsibility. During his tenure at Merck he developed and implemented industry-leading genetic platforms for the generation of genetically engineered disease models in support of global therapeutic area franchises. He was also charged with leading the evaluation and development of innovative embryonic stem cell-based assay platforms that delivered an earlier understanding of risk of drug candidates, resulting in positive impact to attrition in late development. Before moving to Merck, Dr. Raymond was a Leukemia & Lymphoma Society Fellow at the Fred Hutchinson Cancer Research Center where he examined the cell autonomous role of PDGF receptor alpha signaling in neural crest cells during craniofacial development using a novel gain-of-function retroviral gene trap screen in mouse embryonic stem cells. Dr. Raymond received his Ph.D. degree in Biochemistry, Molecular Biology and Biophysics from the University of Minnesota.

John Schatzle, PhD has served as the Director of Basic and Population Science Shared Resources at Moffitt Cancer Center since 2015 and provides administrative and scientific oversight to the following Shared Resources: Proteomics, Molecular Genomics, Flow Cytometry, Chemistry and Structural Biology, Analytical Microscopy, Small Animal Imaging, Cancer Informatics, Survey Methods and Biostatistics.

Prior to joining Moffitt Cancer Center, he served as the Director of Scientific Operations at the Vaccine and Gene Therapy Institute of Florida (VGTI-FL) from 2009-2015. As Director of Scientific Operations at VGTI-FL his duties included the management of scientific staff, the direction and management of core facilities, Information Technology, Environmental Health and Safety and the BSL/ABSL-3 facility and vivarium. He also held adjunct professor appointments with the University of Miami and Florida Atlantic University.

Dr. Schatzle obtained his B.S. in Microbiology from the U. of Louisiana, PhD training in Microbiology and Immunology from Louisiana State University Medical School and post-doctoral training in retrovirology and oncology from the University of Texas at Austin. He was an Associate Professor of Pathology and the Center for Immunology at the University of Texas Southwestern Medical Center (UTSW) in Dallas, TX from 1996-2009. He led an independent research program at UTSW studying the innate immune response with an emphasis on Natural Killer Cell biology and later was focused on genetics of autoimmune diseases such as Systemic Lupus
Erythematosus. He also served as the Chair of the Immunology Graduate Program at UTSW from 2008-2009.

Edward Seijo, MS, FABC is the Director of Translational Sciences & Biorepository Shared Resources at the Moffitt Cancer Center. Mr. Seijo joined the Cancer Center in 1999 and currently serves as the Director of Translational Sciences & Biorepository Shared Resources. He is responsible for administratively directing the overall operations of the Translational and Biorepository Shared Resources which include the Tissue Core, Cell Therapies Core, and institutionally-supported Translational Research Facility. His primary responsibilities include, but are not limited to, annual capital and operational budgets; development and implementation of assigned core facilities fee recovery strategies; ensuring that all policies, procedures, and guidelines governing core facility activities that support member-driven science are being followed; serving as a liaison between the shared resources, members, and Cancer Center leadership; and providing operational and feasibility review for new protocols utilizing biospecimens and related data. Mr. Seijo is an

active member of the Cancer Center's Laurel Scientific Review Committee (SRC) which provides scientific and operational review of new protocols utilizing human biospecimens. Similarly, he is the co-chair of the TCC Data and Tissue Management and Release Committee (DATMAR), which provides institutional oversight and recommendations related to release of biospecimens and linked data.

Mr. Seijo received his undergraduate and Master's degree in Microbiology from the University of South Florida and has over 20 years of laboratory experience, including in molecular microbiology, optical microscopy imaging, image analysis, and biobanking best practices. He has held various roles at MCC and was promoted to his current role in March 2015, after previously serving as Director Tissue Core operations. Mr. Seijo has served as a lead field inspector for the College of American Pathologist (CAP) Biorepository Accreditation program. In 2009, Mr. Seijo completed a two year fellowship leading to the Fellow of the Advisory Board (FABC) which focused on health care operations and leadership best practices. In December 2012, Mr. Seijo was awarded MCC's Award of Excellence for his contributions to the research mission of the Cancer Center. This award recognizes individuals who exemplify the vision, dedication, compassion, and caring spirit of founder H. Lee Moffitt.

Dr. François Modave, PhD is an associate professor of Biomedical Informatics in the department of Health Outcomes and Policy, and the director of the mHealth Lab, at the University of Florida. Prior to this appointment, he was associate professor and chair of the Department of Computer Science at Jackson State University, and associate professor in the Department of Family and Community Medicine at Texas Tech University Health Sciences Center – El Paso, Texas. He received his M.S. in Applied Mathematics from the Université of Paris IX -Dauphine in 1994, in Paris France, and his Ph.D. in Computer Science from ENSEEIHT – Université Toulouse III also in France, in 1999.

His research focuses on 1) the development of algorithms and their informatics implementation in biomedical research, with a particular emphasis on the understanding of medical decision-making processes, involving patients and healthcare providers; 2) mHealth interventions for chronic conditions at the point-of-care, in particular, interventions with a physical activity focus.

Dr. Modave has been the recipient of awards from the National Institutes of Health, the National Science Foundation, Army Research Lab, NASA / Boeing, and IBM.

Sean Yoder, MS, has led the Molecular Genomics Core Facility at The Moffitt Cancer Center since July of 2012. Mr. Yoder received his BS and MS degrees from the University of South Florida, Department of Cell Biology, Microbiology and Molecular Biology. Following post-graduate research to study the genomics of large granular lymphocyte (LGL) leukemia in the laboratory of Dr. Thomas Loughran at the Moffitt Cancer Center & Research Institute, Mr. Yoder joined the Molecular Genomics Core (then known as the Microarray Core) in 2002 as a Research Associate, with promotions to Staff Scientist in 2007, and to Core Facility Manager in 2012. Mr. Yoder has extensive bench experience in processing samples for microarray analysis and next-generation sequencing, including on-site training from vendors including Affymetrix, Illumina, NimbleGen, NanoString, Agilent, and Beckman. In addition to managing the day-to-day activities of The Molecular Genomics Core, Mr. Yoder's current role includes the development of new core services, experimental design consultation, and grant and manuscript preparation assistance for Moffitt Members. Centering on the use of genomics technologies, Mr. Yoder's current cancer research collaborations focus on the development of techniques for liquid biopsy assays, prognostic cancer biomarker development, and tumor heterogeneity and evolution.

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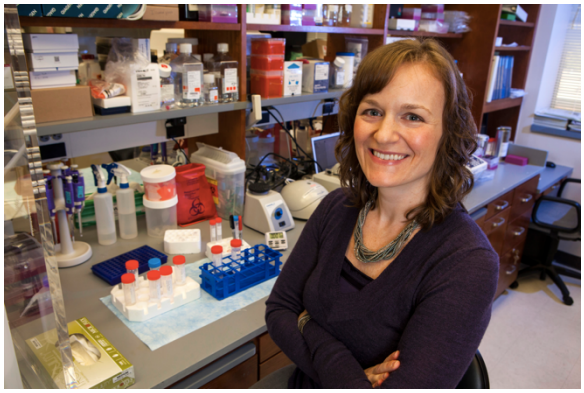
Kim Dahlman, PhD, President

Vanderbilt University
Assistant Professor, Department of Cancer Biology
Director, Innovative Translational Research Shared Resource



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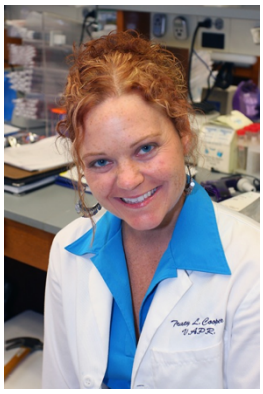

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Claudius Mundoma, PhD, MBA

Florida State University
Director, Physical Biochemistry Facility

Michael Zwick, PhD

Emory University
Assistant Vice President for Research

Poster Abstracts

1. **Home built mono and dual axis crystal imaging robot**

Thayumanasamy Somasundaram, Florida State University; Michael Zawrotny, Florida State University

Growing crystals of biological macromolecules suitable for solving 3-dimensional structure require finding few conditions out of thousands on multi-well crystallization plates. This necessitates automated imaging, sorting, and scoring. Available commercial imaging devices are expensive and feature both proprietary hardware and software that are unsuitable for modifications. We describe two imaging robots that are designed and built at home using simple components, using open-source software, for a fraction of the cost, and are amenable for modifications. One robot is a dual axis version and is capable of scanning and storing of images of 96-reservoir-3-well or -2-well ARI Intelliplate plates. The other robot is a mono axis version and is capable of scanning 24 well VDX plates.

2. **Innovative Translational Research Shared Resource**

Kimberly B. Dahlman, Vanderbilt University; Jamye F. O'Neal, Vanderbilt University Medical Center

The mission of the Innovative Translational Research Shared Resource (ITR) is to advance the translation of research into improved anti-cancer therapies by guiding, managing, and facilitating pre-clinical and clinical trial laboratory discoveries. The ITR partners with oncologists to study cancer patient phenotypes in a research laboratory. Furthermore, we work with the Clinical Trials Shared Resource and principal investigators on clinical trial correlative study design, specimen workflow, and protocol, lab manual, and budget generation. We have established standard operating procedures for solid tumor, bone marrow, and blood sample collection and processing for a variety of downstream applications. We also lead project management, sample tracking, and experiment execution for many of these clinical trials. The ITR utilizes Vanderbilt and non-Vanderbilt resources to identify novel tumor biomarkers, measure signaling responses, and track tumor heterogeneity for research. This knowledge will lead to improved clinical therapies and a more personalized cancer care that will save lives and improve patient outcomes. Over the past seven years, the ITR has collaborated on 102 projects with >50 unique investigators. This work has been recognized by 31 publications (23 co-authored) and has contributed to externally-funded grants awarded to VICC investigators totaling over $48M in direct costs.

3. **Development and Characterization of Mouse Monoclonal Antibodies against Zika Virus Non-Structural Glycoprotein 1 (NS1)**

J.M. Goldstein, RDSB/DSR/NCEZID/CDC; J. Lee, RDSB/DSR/NCEZID/CDC; X. Tang, RDSB/DSR/NCEZID/CDC; L. Hughes, RDSB/DSR/NCEZID/CDC; T. Taha, RDSB/DSR/NCEZID/CDC; A. Calvert, ADB/DVBD/NCEZID/CDC; A. Powers, ADB/DVBD/NCEZID/CDC; and D.A. Bagarozzi, Jr., RDSB/DSR/NCEZID/CDC

The current pandemic of Zika virus (ZIKV) and its linkage to birth defects and neurological symptoms has prompted the development of novel reagents for diagnostic support. ZIKV nonstructural-1 glycoprotein (NS1) is a glycosylated 48-kDa protein that plays a role in both viral

replication and immune evasion. NS1 is initially translated as a monomer into the endoplasmic reticulum but rapidly forms multimers with distinct fates in the cell. It has been shown to be a candidate biomarker during active infection based on studies with dengue virus. In this study, seven monoclonal antibodies (mAbs) were isolated from BALB/c mice immunized with mammalian recombinant r-NS1 recognized by ZIKV positive human serum. Characterization using multiple biochemical and cellular methods (ELISA, bio-layer interferometry and immunoblotting) with active virus and r-NS1 revealed certain mAbs were ZIKV-specific with limited cross-reactivity among other flavivirus members, notably dengue. Characterization of these anti-NS1 mAbs will provide a continued source for CDC and Partners engaged in reagent and assay development.

4. Emory Integrated Genomics Core

Michael E. Zwick, Emory University

This poster will describe the services provided by the Emory Integrated Genomics Core (http://www.cores.emory.edu/eigc/), one of the Emory Integrated Core Facilities, at Emory University.

5. Emory University Mouse Transgenic and Gene Targeting Core

Christopher Raymond, Emory University

This poster will describe the services provided by the Emory Mouse Transgenic and Gene Targeting Core (http://www.cores.emory.edu/tmc/), one of the Emory Integrated Core Facilities at Emory University.

6. Conserved Flexible Linker Controls Intramolecular p53 Mimicry in MDMX

Wade Borcherds, Department of Cell Biology, Microbiology, and Molecular Biology, University of South Florida, Tampa, FL, United States, Center for Drug Discovery and Innovation, University of South Florida, Tampa, FL, United States; Andreas Becker,Drug Discovery Department, Moffitt Cancer Center, Tampa, FL, United States; Lihong Chen, Molecular Oncology Department, Moffitt Cancer Center, Tampa, FL, United States; Jiandong Chen, Molecular Oncology Department, Moffitt Cancer Center, Tampa, FL, United States; Lucia B. Chemes, Protein Structure-Function and Engineering Laboratory, Fundación Instituto Leloir and IIBBA-CONICET, Buenos Aires, Argentina; Gary W. Daughdrill, Department of Cell Biology, Microbiology, and Molecular Biology, University of South Florida, Tampa, FL, United States, Center for Drug Discovery and Innovation, University of South Florida, Tampa, FL, United States

MDMX contains an intramolecular motive that mimics the binding of the p53 tumor suppressor and reduces the apparent affinity of MDMX to p53 by a factor of 400. This motive is linked to the p53 binding domain of MDMX by a conserved ~85 aa linker. The linker has a sequence identity of 51% amongst 52 MDMX sequences from primates, mammals, birds, reptiles, amphibian and fish; it plays a vital role for the regulation of the p53/MDMX interaction.

7. **A novel image cytometric analysis method for T cell-mediated cytotoxicity of 3D tumor spheroids**

Leo Li-Ying Chan, Nexcelom Bioscience; Laure Humbert, Immunocore; Scott Cribbes, Nexcelom Bioscience

Cell-mediated cytotoxicity assays have been frequently performed to characterize cytotoxic potential of immune cells, antibodies, and drug compounds. Traditionally, these assays are performed using release assays such as Cr51 (radioactivity), Calcein (fluorescence), or LDH (enzymatic). However, release assays have limitations such as the handling of hazardous material and the indirect measurement of cell death. These assays are commonly performed in 2D cultures, which have difficulty identifying qualifying drug candidates for clinical testing, thus there has been an interest of performing cytotoxicity assays in 3D tumor models. Traditional 3D spheroid analysis methods require the use of standard microscopy, which is time-consuming and subjective. In this work, we demonstrate a novel method of analyzing T cell-mediated cytotoxicity on 3D tumor spheroids in the presence of absence of ImmTAC molecules, which can promote higher T cell killing. In this experiment, MDA-MB-453 GFP expressing breast cancer cells are used to form tumor spheroids in an ultra-low attachment plate. The spheroids are then treated with primary T cells at different E:T ratios, and different concentrations of ImmTAC. The results showed a dose response effect of T cell killing with the addition of ImmTAC molecules by measuring spheroid size in GFP fluorescence and viability using propidium iodide. The captured bright-field and fluorescent images also clearly showed the cytotoxicity effect from the combination of T cells and ImmTAC. The ability to screen cytotoxic effects of immune cells, antibody, and drug compounds on 3D tumor spheroids can provide an alternative tumor model for identifying more qualified cancer drug candidates for drug discovery campaigns.

8. **Novel MicroScale Solutions for Biophysical Characterization in Drug Discovery and Development**

Wyatt Strutz, NanoTemper Technologies Inc; Dennis Breitsprecher, NanoTemper Technologies GmbH

Here we present 2 unique and proprietary technologies for biophysical characterization of biomolecules to facilitate the drug discovery and drug development process: MicroScale Thermophoresis (MST) monitors the movement of molecules through µm-sized temperature gradients to quantify interactions of any kind of molecule. Recent results from automated high-throughput primary and secondary screening campaigns by MST will be presented. In a collaboration project with Sanofi R&D, MST identified several hits which were not detected by orthogonal techniques. In addition, MST detected secondary effects such as protein aggregation and denaturation, and could thus be used to reliably rule-out false positives and measurement artifacts. nanoDSF technology is specifically tailored for thermal and chemical unfolding studies. By monitoring fluorescence shifts of the amino acid tryptophan or tyrosine, unfolding profiles of multidomain proteins, transmembrane proteins or low-abundant drug targets can be obtained in an entirely label-free approach. Here, we present buffer and detergent screening campaigns for membrane proteins as well as for antibodies and antibody-drug conjugates, highlighting the sensitivity and resolution of this method. In addition, the fully-automated protein stability platform using the novel Prometheus NT.Plex in combination with NT.Robotic Autosampler enables high-throughput measurements as required in formulation development. Thermal and chemical unfolding data correlate with long-term turbidity and monomer content over time, showing that

the Prometheus NT.Plex can be used to rapidly predict the long-term stability of biologics within 1 day.

9. **Title: A Mab Development Project and Considering a New Service Option**

Ruth Davis, University of Georgia Bioexpression and Fermentation Facility

Poster tracks the development of an anti-endospore hybridoma from immunization through selection to cryopreservation and production of the antibody. Then the options for purification are explored and discussed.

10. **The Bioexpression and Fermentation Facility at the University of Georgia**

Michelle Lewis, University of Georgia Bioexpression and Fermentation Facility

The Bioexpression and Fermentation Facility (BFF) was established in 1967 and is currently one of the largest fermentation pilot plants in the Southeast. The BFF consists of the Fermentation Research Facility, Protein Purification Facility, Cell Culture Facility and Monoclonal Antibody Facility. These four divisions operate under ICH Q10 quality guidelines enabling the BFF to provide clients with a comprehensive array of services covering a wide range of biomanufacturing areas.

See you in Atlanta for the 2018 SEASR meeting!