

NanoX Mini- Symposium

September 21, 2018
**BioScience Research
Collaborative
Event Hall**

Gulf Coast Consortia
 **QUANTITATIVE BIOMEDICAL SCIENCES**

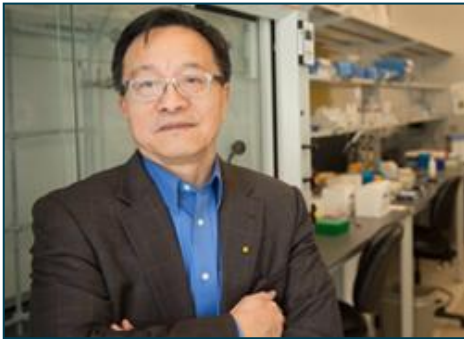


NanoX Symposium
September 21, 2018
BRC Event Space unless otherwise noted

Agenda

- 12:30 pm Registration
- 1:00 pm Welcome: Anil Sood, MD Anderson Cancer Center and Stuart Corr, Baylor College of Medicine
- 1:15 pm Rapid Fire Talks
- Diagnostics
- Nadarajah Vigneswaran, University of Texas Health Science Center
- Richard Willson, University of Houston
- Tissue Engineering
- Laura Smith-Callahan, University of Texas Health Science Center
- Dan Harrington, University of Texas Health Science Center
- Nanomaterials
- Rachael Sirianni, University of Texas Health Science Center
- Dmitri Litvinov, University of Houston
- Imaging
- Pratip Bhattacharya, MD Anderson Cancer Center
- Chun Lj, MD Anderson Cancer Center
- Therapeutics
- Stuart Corr, Baylor College of Medicine
- Bulent Ozpolat, MD Anderson Cancer Center
- 2:15 pm Break
- 2:30 pm Breakout Sessions
- 3:45 pm Break
- 4:00 pm Keynote: *Nanomedicine and Genome Editing Approaches for Disease Therapies* (BRC Auditorium) Gang Bao, Rice University
- 5:00 pm Networking Reception and Poster Session

NanoX Symposium Keynote Speaker



Gang Bao

Processor, Chemistry

Rice University

Nanomedicine and Genome Editing Approaches for Disease Therapies

Abstract:

The integration of biomolecular engineering, nanotechnology and biology is expected to produce major breakthroughs in medical diagnostics and therapeutics. Due to the size-compatibility of nano-scale structures with proteins and nucleic acids, the design, synthesis and application of nanoprobes, nanocarriers and nanomachines provide unprecedented opportunities for achieving a better control of biological processes, and drastic improvements in disease detection, therapy, and prevention. Recent advances include the development of multi-functional nanoparticles, nano-structured materials and devices, and engineered nucleases for biological and medical applications.

In this talk I will showcase the recent development of magnetic nanoparticle based approaches in my lab for disease therapies, including heat generation by magnetic iron oxide nanoparticles for hyperthermia and nanowarming, nanoparticle-based stem cell targeting, the use of magnetic nanoparticles for enhancing *in vivo* drug/gene delivery, and the nanomagnet based delivery of CRISPR/Cas9 systems for *in vivo* genome editing. The opportunities and challenges of *in vivo* magnetic targeting are discussed.

NanoX Symposium Registrant Information

Ghanashyam Acharya

Associate Professor

Surgery and Department of Ophthalmology, Baylor College of Medicine

gacharya@bcm.edu

Research Areas:

- Nanomedicine
- Drug Delivery
- Regenerative Medicine

Type of collaborator would like to find: Nanomedicine, Regenerative Medicine

Poster Number: 1

Poster Title: Noninvasive Nanowafer Drug Delivery to the Retina

Leonie Aengenheister

Postdoc

Obstetrics & Gynecology, UT Medical Branch at Galveston

Leonie.Aengenheister@empa.ch

Research Areas:

- nanomedicine
 - pregnancy
-

Michael Allon

Associate Professor

Obstetrics and Gynecology, IBT Texas A&M Health Science Center

drallon@drallon.com

Research Areas:

- Reproductive endocrinology and infertility
- Regenerative Medicine

Resources willing to share: Experience in research

Type of collaborator would like to find: Disease therapy

Poster Number: 2

Poster Title: Amniotic membrane in adhesion prevention

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Catherine Ambrose

Associate Professor

Orthopaedic Surgery, UT Health Science Center at Houston

Catherine.G.Ambrose@uth.tmc.edu

Paola Amero

Postdoc

Experimental Therapeutics, UT MD Anderson Cancer Center

PAmero@mdanderson.org

Research Areas:

- Aptamers
- Cancer

Resources willing to share: Aptamers

Type of collaborator would like to find: Drug development

Ron Baklarz

yu4ch6un@sbcglobal.net

Research Areas: nano cervical spine sheathing

Eugenie Basseres

Postdoc

Pharmacy Practice and Translational Research, University of Houston

ebassere@central.uh.edu

Research Areas:

- Microbiology
- microscopy

Resources willing to share: C. difficile biobank

Poster Number: 3

Poster Title: Visualization of the Association of Fidaxomicin and Clostridioides Difficile Spores

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Rashad Baiyasi

Predoctoral

Electrical and Computer Engineering, Rice University

rib1@rice.edu

Research Areas:

- Nanophotonics
- image processing

Type of collaborator would like to find: collaborators working on single-molecule imaging or plasmonic nanoparticle therapeutics.

Poster #: 43

Poster Title: PSF Distortion in Dye-Plasmonic Nanomaterial Systems: Friend or Foe?

Prajwal Bhandari

Student

Radiology, Baylor College of Medicine

prajwal.bhandari@bcm.edu

Research Areas:

- Nanoparticle fabrication
- Imaging

Type of collaborator would like to find: Pharmaceutical company for drug designing.

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Pratip Bhattacharya

Associate Professor

Cancer Systems Imaging, UT MD Anderson Cancer Center

Speaker

PKBhattacharya@mdanderson.org

Research Areas:

- nanoimaging
- hyperpolarized MR

Resources willing to share: DNP polarizer

Type of collaborator would like to find: imaging systems

Christian Boada

Student

Regenerative Medicine, Houston Methodist Research Institute

cboada41@gmail.comRachael

- Nanomedicine
- Drug Delivery
- Biomimetic Nanoparticles
- Lipoprotein Based Nanoparticles
- Cardiovascular Diseases
- Atherosclerosis

Resources willing to share: The expertise of our lab is focus on the synthesis of biomimetic nanoparticles that incorporate membrane proteins into the membrane to transfer some of the qualities of cells.

Type of collaborator would like to find: I am looking to collaborate with people that work in cardiovascular disease that are familiar with the pathways that regulate inflammation in atherosclerosis. Our team needs to test the efficacy of our platform and in vivo effectiveness is crucial to advance and improve our platform. Additionally we are looking for people who work with liver diseases for similar purposes.

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Audrius Brazdeikis

Professor

Physics and Texas Center for Superconductivity, University of Houston

audrius@uh.edu

Research Areas: Biomedical instrumentation research, Magnetic hyperthermia research, Magnetic sensors, Characterization of nanomaterials, Materials physics

Resources willing to share:

- Magnetic sensors (probes) for preclinical research, laparoscopic and robotic surgery applications, ac susceptometry-based sensing for accurate node and lesion localization using magnetic seeds and/or magnetic tracers,
- Instruments for magnetic hyper

Type of collaborator would like to find: Research and new proposal development

Poster #: 5

Poster Title: Instruments for Magnetic Sensing and Hyperthermia Applications for Surgical Guiding, InVivo and InVitro Studies, Immunotherapy, Drug Release and Drug Delivery Research

Lauren Byrne

Student

Natural Sciences, UT MD Anderson Cancer Center

laurenbyrne@gmail.com

Research Areas:

- Tissue engineering
- nanomaterials

Type of collaborator would like to find: I would like to find a mentor

Poster #: 6

Poster Title: Modeling Human KRAS Mutant Lung Adenocarcinoma in Gprc5a -/- Mice

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Chengzhi Cai

Professor

Chemistry, University of Houston

cai@uh.edu

Research Areas:

- Biomaterials
- Bioconjugation
- surface chemistry
- mass spectrometry
- biofilms

Resources willing to share: mass spectrometry

Type of collaborator would like to find: proteomics

Poster #: 7

Poster Title: Mass spectrometry proteomics for low abundant proteins

Roberto Cardenas-Zuniga

Postdoc

Experimental Therapeutics, UT MD Anderson Cancer Center

RCardenas@mdanderson.org

Research Areas:

- Aptamers
- Liposomes

Resources willing to share: Aptamers

Type of collaborator would like to find: targeting PDL1

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Long Chang



Assistant Professor
ECE, University of Houston

lvchang@central.uh.edu

Research Areas:

- Nanofabrication
- Biosensors

Resources willing to share: We can share our poster.

Type of collaborator would like to find: We are seeking collaborators who can develop diagnostic tests using lateral flow assay technology. We are also seeking end users such as clinicians who are in need of diagnostic solutions.

Poster #: 8

Poster Title: Ultrasensitive Diagnostic Platform for Home Use



Paul Cherukuri

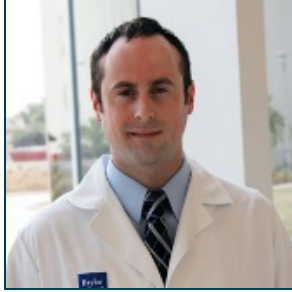
Executive Director
Institute of Biosciences and Bioengineering, Rice University

cheru@rice.edu

Research Areas:

- Nanomaterials
- Directed self-assembly
- Bioelectronics
- Biomaterials

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Stuart Corr

Assistant Professor

Surgery, Baylor College of Medicine

Speaker

scorr@bcm.edu

Research Areas:

- Nano Therapeutics
- Nano Electric Fields

Resources willing to share: Bcm Advanced Tech

Type of collaborator would like to find: Like Minded



Delia Danila

Assistant Professor

Internal Medicine, UT Health Science Center at Houston

Delia.Danila@uth.tmc.edu

Research Areas:

- Diagnostic Imaging
- Nanoparticles Synthesis

Resources willing to share: Nanoparticles Synthesis

Pre-Clinical CT Imaging

Type of collaborator would like to find: Imaging/Therapy

Poster #: 9

Poster Title: Contrast Agent Development

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Enrica De Rosa

Intravital Microscopy Core Director

Nanomedicine, Houston Methodist Research Institute

ederosa@houstonmethodist.org

Research Areas:

- Drug delivery
- Intravital microscopy
- Nanotechnology

Resources willing to share: any

Type of collaborator would like to find: new delivery platform to test in vivo

Poster #: 10

Poster Title: Nanotechnologies advancement probed with Intravital Microscopy

Steven Demers

Student

Physics & Astronomy, Rice University

smd10@rice.edu

Research Areas:

- Biophysics
 - nanoscale plasmonics
-

Zeynep Dereli Korkut

Postdoc

Neurosurgery, Houston Methodist Research Institute

zderelikorkut@houstonmethodist.org

Research Areas:

- Development of drug screening platform for Glioblastoma multiform.
- Development of exvivo models for drugs testing.

Resources willing to share: Oncoslice culturing of tissues.

Type of collaborator would like to find: I would like to meet with collaborators to work on tissue engineering and nanomedicine.

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Laxman Devkota

Postdoc

Radiology, Baylor College of Medicine

Devkota@bcm.edu

Research Areas:

- Chemistry
- Nanomedicine
- Multimodality Imaging

Type of collaborator would like to find: Imaging, nanomedicine

Dmitri Dozortsev

IVF, Advanced Fertility Texas

dmitrid385@hotmail.com

Research Areas:

- IVF
 - Stem cells
-

Prasanta Dutta

Research Scientist

Cancer Systems Imaging, UT MD Anderson Cancer Center

p Dutta@mdanderson.org

Research Areas:

- Diamond nanoparticles
- Imaging Tumor Metabolism

Resources willing to share: MRI

Type of collaborator would like to find: Nano-Biotechnology

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Yossi Eliaz

Student

Physics, University of Houston

Yeliaz@uh.edu

Research Areas:

- Bio physics
- Genomics

Resources willing to share: Machine learning in genomics, simulation of actomyosin networks

Poster #: 11

Poster Title: Simulating bio system on chip in silico



Carly Filgueira

Assistant Professor

Nanomedicine, Houston Methodist Research Institute

csfilgueira@houstonmethodist.org

Research Areas:

- Immunotherapy
- cancer biology

Resources willing to share: data

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Jefferson Friguglietti

Student

Engineering, University of Houston

jackjeff1s@yahoo.com

Research Areas:

- Tissue Engineering
- Tissue Scaffold Design

Resources willing to share: 3D in Vitro Scaffold Design

Type of collaborator would like to find: "Stem Cell Tissue engineering 3D scaffold design"

Poster #: 13

Poster Title: Micro patterned Substrates for Differentiating Mesenchymal Stem Cells into Insulin Producing Cells

Ketan Ghaghada

Assistant Professor

Radiology, Texas Children's Hospital

kbghagha@texaschildrens.org

Research Areas:

- Cancer imaging and therapeutics
- Imaging of inflammatory, cardiovascular and neurodegenerative diseases

Resources willing to share: Imaging - MRI and CT

Nanoparticle contrast agents

Type of collaborator would like to find: Biologists, clinicians

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Ping Guo

Assistant Professor

Orthopaedic Surgery, UT Health Science Center at Houston

ping.guo@uth.tmc.edu

Research Areas:

- Stem cell therapy
- gene delivery

Type of collaborator would like to find: gene delivery with nano particles.

Poster #: 14

Poster Title: TIPE2 gene transfer attenuates muscle histopathology in mdx mice



Jason Hafner

Professor

Physic & Astronomy, Rice University

hafner@rice.edu

Research Areas:

- nanomaterials
- spectroscopy
- membrane biophysics

Resources willing to share: Microspectrometer for solution-phase surface enhanced Raman spectroscopy

Type of collaborator would like to find: We have a new method to determine molecular orientation and position relative to a gold nanoparticle surface. We use it for molecules embedded in lipid bilayers (model biomembranes). We are interested in trying it on other people's systems: either a molecule in a lipid membrane, or just peptides or drugs attached to nanoparticles.

Poster #: 15

Poster Title: Structural Analysis by Enhanced Raman Scattering

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Daniel Harrington

Speaker

Assistant Professor

Diagnostic & Biomedical Sciences, UT Health Science Center at Houston

daniel.harrington@uth.tmc.edu

Research Areas:

- Biomaterials
- Tissue Engineering
- Cancer models

Resources willing to share: We are one of the local sites that has a PC running IMARIS software, for 3D reconstruction of confocal microscopy z-stacks and quantification of relevant parameters (e.g. size, shape, # particles, etc. in 3D and 4D (with time)).

Type of collaborator would like to find: Generally interested in hearing the work being done locally.

Poster #: 15

Poster Title: Peptide-Modified Hydrogels Enable Salivary Cell Co-Cultures

Troy Hendrickson

Student

Regenerative Medicine, Houston Methodist Research Institute

thendrickson@houstonmethodist.org

Research Areas:

- Cardiovascular
- Stem Cells

Resources willing to share: Cardiac Tissue Engineering

Type of collaborator would like to find: Cardiac Conduction Measurements

Poster #: 17

Poster Title: Biomimicry with an aligned, conductive electrospun patch for iPSC-derived cardiomyocyte maturation

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Matteo Hirsch

Student

Nanomedicine, Houston Methodist Research Institute

mhirsch@houstonmethodist.org

Resources willing to share: Nanomedicine and Radiotherapy

Type of collaborator would like to find: Project collaboration

Poster #: 12

Poster Title: Metal Nanoparticle Radiosensitization and Immunotherapy as a Therapeutic Strategy for Non-Small Cell Lung Cancers

Hannah Hughes

Student

Physics, Rice University

hh32@rice.edu

Research Areas:

- plasmonics
- surface enhanced Raman spectroscopy
- structural biology

Mohammed Khaleduzzaman

Research Associate

Collage of Pharmacy, University of Houston

khaledzaman1961@gmail.com

Research Areas:

- Clinical therapeutics using Cell Biology
- Clinical therapeutics using Molecular Biology

Resources willing to share: Any resource lead to find project with Cell Biology, and Molecular Biology.

Type of collaborator would like to find: Bioinformatics and targeted NGS sequencing of cancer-associated genes using DNA isolated from brush biopsy samples and archival FFPE tissue sections of oral precancers.

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Mohammad Khodadadi

Postdoc

Center for Integrated Bio and Nano System, University of Houston

mkhodadadi@uh.edu

Research Areas:

- Magnetic biosensors
- Biosensors
- Drug delivery using multi-ferroic nanoparticles

Resources willing to share: Poster about our unique biosensor.

Type of collaborator would like to find: Bioscientist with the research interest in immunoassays.

Poster #: 18

Poster Title: Ultra-sensitive Magnetometry for the Quantitation of Magnetic Bio-Assays

Carter Kittrell

Research Scientist

Chemistry, Rice University

kittrell@rice.edu

Research Areas:

- Nanomaterials
- CVD growth of graphene
- Carbon nanotube growth

Resources willing to share: Chemical vapor deposition and system design

Type of collaborator would like to find: Systems design for gas phase production of nanomaterials

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Anil Kulkarni

Professor

Surgery, UT Health Science Center at Houston

anil.d.kulkarni@uth.tmc.edu

Research Areas:

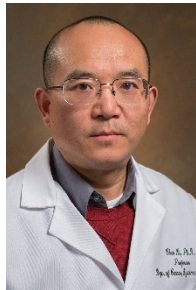
- Immunonutrition
- Immunomodulation
- Microgravity
- Immune response Translational Research

Resources willing to share: Knowledge and expertise and lab resources

Type of collaborator would like to find: Who share common interests

Poster #: 20

Poster Title: Immunomodulation in microgravity



Chun Li

Professor

Cancer Systems Imaging, UT MD Anderson Cancer Center

Speaker

cli@mdanderson.org

Research Areas:

- Molecular imaging
- nanomedicine

Type of collaborator would like to find: Translational

Poster #: 22

Poster Title: Targeting tumor stroma to enhance antitumor therapy against PDAC

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Yaxi Li

Student

Biomedical Engineering, University of Houston

yli114@uh.edu

Research Areas:

- autoimmune disease
- breast cancer

Poster #: 21

Poster Title: Polymeric Nanobiosensors for Ultrasensitive Detection of Disease Markers and Toxins

Zuan-Tao Lin

Student

Biomedical Engineering, University of Houston

ZuantaoLin@gmail.com

Research Areas:

- Polymer
- Sensor
- Biomarker
- nanoparticles

Poster #: 23

Poster Title: Polymeric Nanobiosensors for Ultrasensitive Detection of Disease Markers and Toxins



Dmitri Litvinov

Speaker

Professor

Electrical & Computer Engineering, University of Houston

litvinov@uh.edu

Research Areas: Nanomaterials, medical diagnostics, targeted drug delivery

Resources willing to share: nanofabrication and materials characterization tools and expertise

Type of collaborator would like to find: clinician to help translate our technologies into medical applications

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Xinli Liu

Associate Professor

Pharmacological and Pharmaceutical sciences, University of Houston

xliu65@central.uh.edu

Chiara Mancino

Student

Regenerative Medicine, Houston Methodist Research Institute

cmancino@houstonmethodist.org

Research Areas:

- Cardiovascular
- stem cells

Resources willing to share: Electrospinning

Type of collaborator would like to find: Conductive polymers expert

Jonathan Martinez

Postdoc

Regenerative Medicine, Houston Methodist Research Institute

jomartinez@houstonmethodist.org

Research Areas:

- Nanotechnology
- Drug Delivery

Resources willing to share: nano-biologist expertise

Type of collaborator would like to find: anything in cancer biology

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Caitlin McCowan

Student

Electrical and Computer Engineering, Rice University

cvm1@rice.edu

Research Areas:

- Hyperpolarization
- MRI
- Molecular Imaging

Type of collaborator would like to find: Nanoparticle Diagnostic MRI

Poster #: 24

Poster Title: Targeted Molecular Imaging of Colorectal Cancer Using Hyperpolarized Functionalized Silicon Nanoparticles by MRI

Fatima Merchant

Associate Professor

Engineering Technology, Biomedical Engineering, University of Houston

fmerchant@uh.edu

Alain Mermet

Professor

French embassy, Other

attache-phys@ambascience-usa.org

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Dhruva Mishra

Postdoc

Surgery Oncology, Houston Methodist Research Institute

dkmishra@houstonmethodist.org

Research Areas:

- Diagnostics
- Therapeutics
- Cancer Metastasis

Resources willing to share: Four dimensional (4D) ex vivo cancer model

Type of collaborator would like to find: Diagnostics Therapeutics

Poster #: 25

Poster Title: Accelerating the identification of liquid biopsy markers in cancer using ex vivo 4D model

Nicholas Murphy

Postdoc

Neuropsychiatry, Baylor College of Medicine

nicholas.murphy@bcm.edu

Research Areas:

- Schizophrenia
- Parkinson's disease dementia
- Psychosis
- Depression

Type of collaborator would like to find: Therapeutics, imaging

Poster # 26

Poster Title: MEG investigation of auditory cortical delta-gamma cross-frequency coupling in early vs. chronic phase schizophrenia.

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Tomoyuki Naoi

Postdoc

Regenerative Medicine Department, Houston Methodist Research Institute

tnaoi@houstonmethodist.org

Research Areas:

- Nanomedicine
- Drug delivery
- Liposome/LNP
- Nucleic acid (siRNA, mRNA) delivery

Resources willing to share:

Type of collaborator would like to find: The researchers who are conducting drug delivery research toward clinical study
The researchers who are developing new bio inert materials



Bulent Ozpolat

Associate Professor

Experimental Therapeutics, MD Anderson Cancer Center

Speaker

bozpolat@mdanderson.org

Research Areas:

- Targeted therapies for breast
- Pancreatic
- lung cancer

Resources willing to share: Cancer animal models and siRNA and miRNA chimeras for in vitro/in vivo treatments

Anna Pasto

Postdoc

Regenerative Medicine, Houston Methodist Research Institute

apasto@houstonmethodist.org

Research Areas:

- cancer
- nanotechnology

Type of collaborator would like to find: nanoparticle expert

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Sagar Patwardhan

Student

Neuroscience, UT Health Science Center at Houston

Sagar.Patwardhan@uth.tmc.edu

Research Areas:

- Nanomaterials that can sit inside individual neurons and are sensitive to voltage deflections
- Nanotechnology to wirelessly transmit or using some other technology, pass voltage information out of a cell, in a way that preserves the identity of the cell b

Type of collaborator would like to find: nanomaterials that sense voltage deflections, and can send these measurements wirelessly or in some other non-invasive way to a receiver outside the animal body.

Sarah Plew

Research Coordinator

Department of Veterans Affairs

sarah.plew@va.gov

Shivanand Pudakalakatti

Postdoc

Cancer Systems Imaging, UT MD Anderson Cancer Center

spudakalakatti@mdnaderson.org

Research Areas: Magnetic resonance Imaging

Resources willing to share: MRI and Dynamic Nuclear Polarizer

Type of collaborator would like to find: nanomaterial scientist

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Li Quan

Biomedical Engineering

quanli99@126.com

Research Areas:

- cancer diagnosis base on the fluorescence probe
- AD diagnosis base on the fluorescence probe

Type of collaborator would like to find: teacher or doctor

Poster #: 27

Poster Title: Polymeric Nanobiosensors for Ultrasensitive Detection of Disease Markers and Toxins

Cristian Rodriguez-Aguayo

Instructor

Experimental Therapeutics, UT MD Anderson Cancer Center

CRodriguez2@mdanderson.org

Research Areas:

- Liposomes
- Nanocarriers
- Rna Based Therapeutics

Resources willing to share: Liposomes

Chitosan Particles

Type of collaborator would like to find: RNA Based Therapeutics

Cancer Research

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Paul Ruchhoeft

Associate Professor

Electrical and Computer Engineering, University of Houston

PRuchhoeft@UH.edu

Research Areas:

- Nanofabrication
- Nanolithography

Resources willing to share: Fabrication processes for forming nanoscale structured arrays with high throughput

Type of collaborator would like to find: Users interested in hybrid nanoparticles consisting of multiple polymer/metal layers, in the structuring of non-planar surfaces, or in the fabrication of large-area nanoparticle arrays

Poster #: 28

Poster Title: Atom beam lithography for the rapid, high-throughput prototyping of large-area nanostructure arrays

Farnaz Safi Samghabadi

Student

Materials Science and Engineering, University of Houston

fsafisam@central.uh.edu

Research Areas:

- Nanomaterials
- Diagnostics
- Drug delivery

Resources willing to share: Our results on multiferroic nanomaterials

Type of collaborator would like to find: People working on biomedical applications of nanomaterials

Travis Salzillo

Student

Cancer Systems Imaging, UT MD Anderson Cancer Center

tcsalzillo@mdanderson.org

Research Areas:

- Hyperpolarization
- MRI

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Joann Schulte

Chief Physician

Houston Health Department

Joann.schulte@houston.tx.gov

Research Areas:

- Lead
 - Epidemiology
-

Laura Segatori

Associate Professor

Bioengineering, Rice University

segatori@rice.edu

Research Areas:

- Nanotherapeutics
- Autophagy
- health and safety of nanomaterials
- impact of nanomaterials on mammalian cells
- cellular response to uptake of nanomaterials, clearance pathways activated in response to nanomaterials

Type of collaborator would like to find: expert in nanomaterial synthesis who want to test effect of their materials in vitro, researchers developing nano materials for therapeutic applications interested in understanding interaction of nano materials with cells (in vitro)

Hyeonglim Seo

Cancer Imaging Systems, UT MD Anderson Cancer Center

hlimsseo@gmail.com

Research Areas:

- Cancer Imaging (MRI)
- Bio-nanomaterial

Resources willing to share: Previous research data and papers

Type of collaborator would like to find: I would like to find faculty members who do research about nano-material synthesis and its imaging application for cancer system.

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Mansi Shah

Postdoc

Ob-Gyn, UT Medical Branch at Galveston

manshah@utmb.edu

Research Areas:

- Drug delivery
- nanotechnology

Type of collaborator would like to find: advancement in nanotechnology, in vivo capabilities

Charles Shang

Assistant Professor

Medicine, UT MD Anderson Cancer Center

cshang9@gmail.com

Research Areas:

- electroceutics
- bioelectromagnetics
- internal medicine

Resources willing to share: My research publications, e.g.

<https://www.sciencedirect.com/science/article/pii/S0079610716300487>

Type of collaborator would like to find: researchers on minimally invasive electroceuticals, atomic magnetometer

Poster #: 30

Poster Title: wearable electroceuticals and nanotechnology

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Liwen Shih



Professor

Computer Engineering, University of Houston

shih@uhcl.edu

Research Areas:

- Quantum Computing (Topology Tuning, Latency-Aware Workflow Allocation, Parameter Sweeping, Material Design, Drug Discovery, EpiGenetics)
- AI Optimization (Head-n-Neck Cancer Spreading Prediction, Virtual Spring Model Multi Drone Group Coordination)

Resources willing to share:

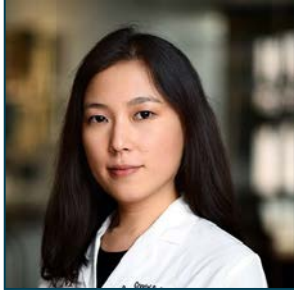
1. Free Access to all NSF XSEDE Supercomputers and Data Storage Supercell, Monthly HPC/BigData Training and Technical Support.
2. Emerging Quantum Thinking, Computing & Problem Solving by constraints.
3. Hosting Annual NASA Innovation/Automation Dual Co

Type of collaborator would like to find: Looking for Complex Application Problems/Data in all areas that demand Efficient and Smart High-performance Computing

Poster #: 31

Poster Title: Automatic Severity Measurement for Diabetes Retinopathy

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Crystal Shin

Assistant Professor

Surgical Research, Baylor College of Medicine

Crystal.Shin@bcm.edu

Research Areas: drug delivery systems, biomaterials

Resources willing to share: Zeta sizer, imaging systems

Type of collaborator would like to find: Regenerative medicine

Poster #: 37

Poster Title: Non-invasive nanowafer drug delivery to the retina



Rachael Sirianni

Assistant Professor

Radiology, UT Health Science Center

Speaker

Rachael.W.Sirianni@uth.tmc.edu

Research Areas:

- drug delivery
- tissue engineering
- pediatric neuro-oncology

Resources willing to share: models in pediatric neuro-oncology, drug loaded nanoparticles

Type of collaborator would like to find: other drug delivery scientists, researchers working on CNS disease

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Laura Smith Callahan

Speaker

Assistant Professor

Neurosurgery, UT Health Science Center at Houston

laura.a.smithcallahan@uth.tmc.edu

Research Areas:

- Tissue engineering
- microfluidics

Resources willing to share: Peptide Synthesis and Characterization equipment

Type of collaborator would like to find:

- Innovative delivery approaches
- systems approaches

Poster # 42

Poster Title: Maximizing human induced pluripotent stem cell derived neural stem cell survival, axon extension and gene expression of neural differentiation markers using polyethylene glycol hydrogels containing a continuous concentration gradient in n-cadherin derived peptide His-Ala-Val-Asp-Lle

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Anil Sood

Professor and Vice Chair

Translational Research, MD Anderson Cancer Center

Speaker

asood@mdanderson.org

Research Areas:

- Nanomedicine
- tumor microenvironment
- exosomes

Resources willing to share:

- Nano-delivery
- mouse models

Type of collaborator would like to find:

- Innovative delivery approaches
- systems approaches

Igor Stupin

Senior Research Scientist

Radiology, Texas Children's Hospital

igor.v.stupin@texaschildrens.org

Research Areas:

- Animal models
- MRi imaging

Resources willing to share: Imaging

Type of collaborator would like to find: any

NanoX Symposium Registrant Information

Manuela Sushnitha

Student

Bioengineering, Rice University

msushnitha@houstonmethodist.org

Research Areas:

- Cancer nanomedicine
- Liposome-based therapeutics
- Triple-negative breast cancer

Type of collaborator would like to find: Experience in siRNA loading into liposomes and testing of these particles

Poster #: 31

Poster Title: Using leukocyte-based biomimetic nanoparticles to target and tune the inflammatory environment in triple-negative breast cancer

Eric Tanifum

Assistant Professor

Radiology, Texas Children's Hospital

tanifum@bcm.edu

Research Areas:

- Imaging agents
- Targeted liposomes

Resources willing to share: Small animal imaging MRI instrument (1T)

Type of collaborator would like to find: Any collaborator to find project with Cell Biology, and Molecular Biology.

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Francesca Taraballi

Assistant Professor

Regenerative Medicine, Houston Methodist Research Institute

ftaraballi2@houstonmethodist.org

Research Areas:

- immune engineering
- tissue engineering

Resources willing to share: Small animal imaging MRI instrument (1T)

Poster #: 32

Poster Title: VLA-4 Targeted Liposomes for Noninvasive Visualization of Vulnerable Plaques in ApoE(-/-) Mice by MRI

Mark Titus

Associate Professor

Genitourinary Medical Oncology, Other

mtitus1@mdanderson.org

Research Areas:

- Prostate Cancer
- Endocrinology

Resources willing to share: Mass Spectrometry Collaboration

Type of collaborator would like to find: All

Chris Tsao

Postdoc

Regenerative Medicine, Houston Methodist Research Institute

ctsao@houstonmethodist.org

Research Areas:

- Biomaterials
- Tissue Engineering
- Drug Delivery

Resources willing to share: Cardiac tissue engineering

Type of collaborator would like to find: Chemical synthesis of materials and fabrication techniques

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Stephanie P. Vega

Postdoc

Anesthesiology, UT Medical Branch at Galveston

spvega@utmb.edu

Research Areas:

- Lung tissue-engineering
- Respiratory infections
- Stem cell therapies

Type of collaborator would like to find: Tissue-engineering Nanoparticle development Lung cancer research.

Poster #: 34

Poster Title: Tissue Engineered Human Lung Models to Study Pathogenesis of Lung Disease

Rafael Verduzco

Associate Professor

CHBE, Rice University

rafaelv@rice.edu

Research Areas:

- Two dimensional polymers
- shape-responsive polymer networks
- surface analysis
- bio-imaging

Resources willing to share: time of flight secondary ion mass spectroscopy (ToF-SIMS) for surface analysis and bio-imaging

Type of collaborator would like to find: Collaborator with a need for materials development and characterization

Poster #: 35

Poster Title: Shape-Responsive Elastomers and High-Strength 2-D Polymer Films

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Nadarajah Vigneswaran

Speaker

Clinician

Diagnostic and Biomedical Sciences, UT Health Science Center at Houston

nadarajah.vigneswaran@uth.tmc.edu

Research Areas:

- Oral cancer and precancer: Minimally invasive diagnostic aids
- Transgenic animal models for oral carcinogenesis for validation of imaging and targeted therapy

Resources willing to share: Cell lines and biopsy samples etc

Type of collaborator would like to find: Bioinformatics and targeted NGS sequencing of cancer-associated genes using DNA isolated from brush biopsy samples and archival FFPE tissue sections of oral precancers

Sonia Villapol

Assistant Professor

Neurosurgery, Houston Methodist Research Institute

svillapol@houstonmethodist.org

Research Areas:

- brain injury
- stroke
- microbiome
- inflammation
- neurorestoration

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David Volk

Assistant Professor

Institute of Molecular Medicine, UT Health Science Center at Houston

David.Volk@uth.tmc.edu

Research Areas:

- Aptamer Development
- Chemistry
- 3D Printing
- Targeting Cancer

Resources willing to share: High resolution, large scale 3D printers

Type of collaborator would like to find: Oncologist looking for new protein targets

Poster #: 36

Poster Title: Developing Aptamers, X-Aptamers and Biomarkers for Diagnosis and Targeting

Hongyu Wang

Assistant Professor

IMM, UT Health Science Center at Houston

Hongyu.Wang@uth.tmc.edu

Research Areas:

- Biomarker
- aptamer technology
- targeted therapy

Resources willing to share: proteomics

Type of collaborator would like to find: in vivo cancer model, nanoparticle

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Richard Willson

Speaker

Professor

Chemical Engineering, University of Houston

rcwww@gmail.com

Research Areas: Medical Diagnostics, Assays, detection, lateral-flow immunoassays, biosensors

Resources willing to share:

Nanoparticle characterization equipment

Type of collaborator would like to find: Physicians with clinically-actionable detection needs, people with very sensitive detectors or reporters that could be the basis of a diagnostic.

Tianfu Wu

Assistant Professor

Biomedical Engineering, University of Houston

tianfu.wu@gmail.com

Research Areas:

- Biomarker
- Biosensor

Resources willing to share: autoantigen array

Type of collaborator would like to find: clinical collaborators,

Poster #: 37

Poster Title: Polymeric Nanobiosensors for Ultrasensitive Detection of Disease Markers and Toxins.

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Min Xiao

Clinician

biomedical engineering, University of Houston

xiaom1017@hotmail.com

Research Areas:

- Polymeric Nanobiosensors
- Renal transplant markers

Resources willing to share: Polymeric Nanobiosensors for Ultrasensitive Detection of Disease Markers and Toxins.

Type of collaborator would like to find: kidney transplant

Pingfeng Yu

Postdoc

Civil and Environmental Engineering, Rice University

py3@rice.edu

Research Areas:

- Antibiotic resistance
- Environmental nanotechnology
- Bioconjugate

Resources willing to share: Bacteria and virus

Type of collaborator would like to find: Experts in functional NPs such as superparamagnetic NPs, light-thermal conversion NPs, micro/nano-swimmers.

Poster #: 38

Poster Title: Enhanced biofilm penetration for microbial control by polyvalent phages conjugated with magnetic nanoparticles

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Ana Maria Zaske

AFM Core Facility Manager

Internal Medicine, UT Health Science Center at Houston

ana.m.zaske@uth.tmc.edu

Research Areas:

- Nanotechnology
- Atomic Force Microscopy

Resources willing to share: I would welcome the opportunity to demonstrate our Atomic Force Microscopy core facility located at the South Campus Research Building # 3, at the Medical Center in Houston. Our scientific community is not aware of the capabilities of this instrumentation

Type of collaborator would like to find: People interested in measuring elastic properties/structure of samples to determine effects of treatment

Poster #: 39

Poster Title: Sensitivity of detection by biological AFM for gold-labeled liposomes on human coronary arterial endothelial cell membranes.

Yili Zhang

Research Scientist

Neurobiology, UT Health Science Center at Houston

yili.zhang@uth.tmc.edu

Research Areas:

- Learning and memory
- Computational Neuroscience

Resources willing to share: computational model codes

Type of collaborator would like to find: Collaborator to test the predictions from my computational models, e.g. the optimal therapies for amnesia

Poster #: 40

Poster Title: Computational model of a positive BDNF feedback loop in hippocampal neurons following inhibitory avoidance training.

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Zhao Zhao

Student

Materials Science and NanoEngineering, Rice University

zz52@rice.edu

Research Areas:

- nanomaterials
- computational materials

Resources willing to share: Some research experience

Type of collaborator would like to find: professors that want PhD students in the materials science field

Assaf Zinger

Postdoc

Regenerative Medicine, Houston Methodist Research Institute

ayzinger@houstonmethodist.org

Research Areas:

- Nano medicine
- Cancer nano therapeutics

Resources willing to share: Dynamic light scattering

Nano Sight

Type of collaborator would like to find: Organic chemist, Translational medicine leading researcher

Poster #: 41

Poster Title: Collagenase encapsulated liposomes disassemble fibrotic tissue in pancreatic cancer and improve the therapeutic effect in mice