

MCBB FACULTY

B

Bansil, Rama - Physics

Biological gels: gastric mucin glycoprotein; aggregation properties related to protective function of gastric mucus; Structure, dynamics and interactions of vesicles and proteins by dynamic light scattering and fluorescent correlation spectroscopy
rb@bu.edu

Barbas, Helen - Health Sciences

Signal transduction of messengers; organization of neural pathways in the prefrontal cortices; excitatory-inhibitory interactions in prefrontal pathways
barbas@bu.edu

Baum, Michael J - Biology

Neurobiology and endocrinology; neuroendocrine regulation of brain and behavioral sexual differentiation in mammalian species; brain lesions and hormonal effects on animal behavior; brain gene expression
baum@bu.edu

C

Callard, Gloria V - Biology

Neuroendocrinology, reproductive & developmental endocrinology, estrogen biosynthesis and actions, gene regulation
gvc@bu.edu

Callard, Ian P - Biology

Physiology; non-mammalian vertebrate gonadal steroid action, receptors, and xenobiotic endocrine disrupting agents
ipc@bu.edu

Cantor, Charles R - Biomedical Engineering

Human genome analysis; new biophysical tools and methodologies; genetic engineering
crc@enga.bu.edu

Caradonna, John P - Chemistry

Non-heme iron metalloproteins and metalloenzymes; biochemical and medical aspects of iron/pterin-dependent aromatic amino acid hydroxylases; computational methods for rational metalloprotein and metalloenzyme design
caradonn@chem.bu.edu

Celenza, John L Jr - Biology

Auxin biosynthesis and plant secondary product metabolism; genetic regulation of lateral root development in *Arabidopsis thaliana*
celenza@bu.edu

Collins, James - Biomedical Engineering

Synthetic biology: designing and constructing synthetic gene networks;
Systems biology: reverse engineering endogenous gene networks
jcollins@enga.bu.edu

Cooper, Geoffrey M - Biology

Cellular growth control, cancer, and signal transduction
gmcooper@bu.edu

D

Damiano, Edward - Biomedical Engineering

Integrated cellular and extracellular biomechanics
edamiano@bu.edu

DeLisi, Charles - Biomedical Engineering

DNA function; protein structure prediction; transcriptional regulation
delisi@bu.edu

Dembo, Micah - Biomedical Engineering

Mechanical properties of biological cells using computational analysis of biological motion
mxd@bu.edu

Deshler, James O - Biology

Molecular mechanisms used by cells to spatially regulate gene expression in the cytoplasm; RNA transport mechanisms in vertebrate cells
jdeshler@bu.edu

E

Eldred, William D - Biology

Signal transduction mechanisms; physiology and biochemistry of neurotransmitter modulation of the cGMP second messenger system in the retina
eldred@bu.edu

Elliott, Sean - Chemistry

Bioinorganic Chemistry and Metallobioc
elliott@chem.bu.edu

Erskine, Mary S - Biology

Endocrinology; mechanisms of animal behavior and influences on their own physiology; neuroendocrine changes that occur at the onset of pregnancy and following mating

erskine@bu.edu

F

Finnerty, John - Biology

Evolution of development, developmental genetics, phylogenetics, evolutionary genomics, invertebrate zoology

jrf3@bu.edu

Frank-Kamenetskii, Maxim - Biomedical Engineering

DNA structure, topology, and function

mfk@bu.edu

G

Gardner, Timothy S - Biomedical Engineering

Optimization of microbial metabolic networks for bioremediation and energy production

tgardner@bu.edu

Gilmore, Thomas D - Biology

Molecular biology; carcinogenesis; lymphoma; apoptosis; retroviruses; transcription factors; signal transduction; chemical inhibitors

gilmore@bu.edu

H

Hansen, Ulla - Biology

Transcription control, cell growth and cycle regulation, estrogen regulation, chromatin

uhansen@bu.edu

Hausman, Robert E - Biology

Gene regulation during embryonic development; role of cell interactions and cell signaling in cell differentiation

hausman@bu.edu

J

Jacobson, Gary R - Biology

Mechanisms of carbohydrate transport in microorganisms; structure-function relationships in membrane-bound transporters; gene regulation of nutrient assimilation

jacobson@bu.edu

K

Kandarian, Susan - Health Sciences

Utilizing computational and molecular approaches to better understand the pathways that mediate muscle protein loss associated with disuse atrophy
skandar@bu.edu

Klapperich, Catherine - Biomedical Engineering

experiments and modeling of the contact problem for nanoscale probes hydrated biomaterials and tissues, cell-biomaterial interactions in tissue engineering materials, and microfluidic device design for low-cost diagnostics and high throughput screening
catherin@bu.edu

Kornberg, Sir Hans L - Biology

Biochemistry and genetics of carbohydrate transport by microorganisms with special reference to the identification and elucidation of the various routes by which fructose is utilized, and the manner in which the operation of these routes is regulated
hlk@bu.edu

L

Laursen, Richard A - Chemistry

Protein chemistry and analytical chemistry: development of peptide and DNA microarray technology; analysis of flavonoid and other dyes in materials of historical interest
laursen@chem.bu.edu

Lin, Jen-Wei - Biology

Mechanisms of neurotransmitter secretion and synaptic plasticity; electrophysiology and molecular biology
jenwelin@bu.edu

Liu, Pinghua - Chemistry

Mechanistic studies on two metallo-proteins (IspG and IspH) in isoprenoid biosynthesis
pinghua@bu.edu

Loechler, Edward L - Biology

Mutagenesis by chemical carcinogens; mechanism of action of anticancer drugs; molecular modeling; computational chemistry of chemical carcinogen DNA adducts and DNA polymerases
loechler@bu.edu

M

Man, Hengye - Biology

Synaptic plasticity, glutamate receptor, protein trafficking
hman@bu.edu

McCall, Kim - Biology

Molecular basis of programmed cell death (apoptosis); cell and developmental biology;
oogenesis in *Drosophila*.
kmccall@bu.edu

Meller, Amit - Biomedical Engineering

Single Molecule Biophysics and Nano-biotechnology
ameller@bu.edu

Mohr, Scott C - Chemistry

Condensed states of DNA and molecular modeling; bioinformatics
mohr@chem.bu.edu

Morgan, Kathleen - Health Sciences

Cytoskeletal Signaling Mechanisms in Mammalian cells
kmorgan@bu.edu

N

Naya, Frank - Biology

Cardiac development and disease, mouse developmental biology, gene regulation
fnaya@bu.edu

P

Porco, John A Jr - Chemistry

New methodologies for chemical synthesis and their application to synthesis of
bioactive natural products and natural product-like molecules
porco@bu.edu

R

Rothschild, Kenneth J - Physics

Biomembranes in energy transduction, ion transport, and signal transduction;
bacteriorhodopsin; FTIR and Raman spectroscopy
kjr@phyc.bu.edu

S

Schaus, Scott E - Chemistry

Molecular events of fundamental cellular processes; cell cycle regulation, cell
proliferation, and intracellular signaling
seschaus@chem.bu.edu

Segre, Daniel - Bioinformatics

Mathematical and computational models for studying the organization and evolution of biochemical networks
dsegre@bu.edu

Smith, Cassandra - Biomedical Engineering

Genome mapping, chromosome markers, signal detection for molecular biological applications; genetic basis of perception and behavior
clsmith@darwin.bu.edu

Smith, Temple - Biomedical Engineering

Computational molecular biology
tsmith@darwin.bu.edu

T

Tamm, Sidney - Biology

Cell motility and cytoskeleton, ciliary motion, termite flagellates, and ctenophore behavior and nervous system
tamm@bu.edu

Tien, Joe - Biomedical Engineering

Microvascular biology and microvascular tissue engineering
jtien@bu.edu

Tolan, Dean R - Biology

Structure and function of isozymes of aldolase; enzymatic mechanism, quaternary structure, and developmental gene regulation; human diseases of fructose metabolism; newborn screening; molecular evolution of vertebrate aldolases
tolan@bu.edu

Tsunoda, Susan - Biology

Targeting and subcellular localization of signaling components and ion channels in neurons and photoreceptors, organization of phototransduction components in the retina and effects on signaling
tsunoda@bu.edu

Tullius, Tom - Chemistry

Chemical probes to map the structure of genomic DNA; identification of proteins involved in repair of oxidative DNA damage; mechanism of hydroxyl radical cleavage of RNA and DNA, structure of DNA and RNA in solution
tullius@bu.edu

V

Vajda, Sandor - Biomedical Engineering

Computational molecular biology; prediction of structure; genetic engineering, molecular modeling for drug design

vajda@bu.edu

W

Waxman, David J - Biology

Liver gene regulation and mechanisms of P450 enzymes in steroid metabolism and drug action; anticancer drug pharmacology and drug resistance; membrane protein biochemistry

djw@bu.edu

Weng, Zhiping - Biomedical Engineering

Computational analysis of gene regulation; protein-protein interaction; algorithms development and applications in molecular biology; drug and vaccine design

zhiping@bu.edu

Widmaier, Eric P - Biology

Mechanisms of diet-induced obesity; reproductive actions of leptin; seasonal control of body mass in mammals; signal transduction in adrenal cortex; development of mature adrenocortical activity

widmaier@bu.edu

Wong, Joyce - Biomedical Engineering

Biomaterials for vascular tissue engineering and targeted drug delivery; microfabrication; scaffold design; elucidation of structure-function relationships between biomaterials, cells and tissues

jywong@bu.edu