

MONDAY, MAY 31

6:00 – 7:00 pm	Hamilton Building / Connelly Auditorium Lobby Arrival & Registration (Refreshments will be served)
Keynote Presentation 7:00 – 8:00 pm	Hamilton Building / Connelly Auditorium (Overflow: Hamilton 505) Dr. Jennifer Lippincott-Schwartz (NIH) Title: Breakthroughs in Imaging Using Photoactivatable Fluorescent Proteins

TUESDAY, JUNE 01

7:00 – 7:45 am	Hamilton Building / Connelly Auditorium Lobby Breakfast and Registration
Welcoming Remarks 7:45 – 8:00 am	Hamilton Building / Connelly Auditorium (Overflow: Hamilton 505) Mark Tykocinski, MD - Dean, Jefferson Medical College Stephen Peiper, MD - Chair, Department of Pathology, Anatomy and Cell Biology
Keynote Presentation 8:00 - 9:00 am	Hamilton Building / Connelly Auditorium (Overflow: Hamilton 505) Prof. Virginia Lee (University of Pennsylvania) Title: Amyotrophic Lateral Sclerosis and Frontotemporal Lobar Degeneration-Connecting the Dots through TDP-43
Conference Presentations 9:15 – 11:45 am (coffee break @10:15 am) coffee/tea service outside classrooms	<p>Bluemley Building / BLSB 101 Stem Cells / Chair: Michael Lisanti</p> <ol style="list-style-type: none"> 1) Neal Flomenberg. Human Hematopoietic Stem Cell Transplantation – Expanding Patient Access and Clinical Applications 2) Evangelos Kiskinis. Using Embryonic and Patient-Specific Induced Pluripotent Stem Cells to Study ALS 3) Eirini P. Papapetrou. Therapeutic globin expression in beta-thalassemia patient iPS cells from genomic “safe harbors” 4) Nikolas Christoforou. Cardiac Tissue Engineering-Challenges of Cell Source and Delivery <p>Bluemley Building / BLSB 105 Drug Design #1 / Chair: Dimitris Agrafiotis</p> <ol style="list-style-type: none"> 1) Bill Jorgensen. Efficient drug lead optimization guided by free-energy calculations 2) Paul Clemons. Small-molecule biological profiling to evaluate libraries and compound collections 3) Ron Dror. Long-timescale molecular dynamics simulation as a tool for understanding drug targets 4) Jus Singh. A novel platform-based approach to silence drug targets using covalent inhibitors <p>Bluemley Building / BLSB 107 Bioengineering Applications #1 / Chair: Jack London</p> <ol style="list-style-type: none"> 1) Giovanni Stracquadanio, Renato Umeton, Alessio Papini, Pietro Liò and Giuseppe Nicosia. Analysis and Optimization of C3 Photosynthetic Carbon Metabolism 2) Wei Li, Paul M. Ruegger, James Borneman and Tao Jiang. Polony Identification Using the EM Algorithm Based on a Gaussian Mixture Model 3) Changyong Yu. A Multi-stage Spectral Alignment Strategy for Unrestrictive PTM Peptide Identification 4) Taehyong Kim, Woochang Hwang, Aidong Zhang and Murali Ramanathan. Computational Framework for Microstructural Bone Dynamics Model and Its Evaluation <p>Jefferson Alumni Hall / JAH 207 Methods for Analysis and Classification / Chair: Junhyong Kim</p> <ol style="list-style-type: none"> 1) Lei Shi, Young-Rae Cho and Aidong Zhang. Functional flow simulation based analysis of protein interaction network 2) Alan L. Kwan, Susan K. Dutcher and Gary D. Stormo. Detecting Coevolution of Functionally Related Proteins for Automated Protein Annotation 3) Steve Essinger and Gail Rosen. The Effect of Sequence Error and Partial Training Data on BLAST Accuracy of Short Reads 4) Stuart King, Yanni Sun, James Cole and Sakti Pamanik. BLAST Tree: Fast Filtering for Genomic Sequence Classification
11:45 am – 1:00 pm	Lunch break (lunch will be served in the Connelly Auditorium Lobby Area)

TUESDAY, JUNE 01 (continued)

<p>Keynote Presentation 1:00 – 2:00 pm</p>	<p>Hamilton Building / Connelly Auditorium (Overflow: Hamilton 505) Prof. George Church (Harvard University) Interfacing Optoelectronics with Biosystems - Reading, writing & interpreting genomes</p>
<p>Conference Presentations 2:15 – 4:45 pm (coffee break@3:15pm)</p> <p>coffee/tea service outside classrooms</p>	<p>Bluemley Building / BLSB 101 Protein Structure and Analysis / Chair: Jeffrey Skolnick 1) Stanisław Ołdziej, Cezary Czaplewski, Adam Liwo and Harold Scheraga. Towards temperature dependent coarse-grained potential of side-chain interactions for protein folding simulations II. Simple functional forms for the side-chain-interaction potential: effect on simulated heat capacity and radius of gyration of staphylococ 2) Qian Cong, Bong-Hyun Kim, Lisa Kinch and Nick Grishin. Structural Differences Between Proteins With Similar Sequences 3) Natalia Petrova and Cathy Wu. Prediction of Catalytic Residues in Proteins Using a Consensus of Prediction (CoP) Approach Bluemley Building / BLSB 105 Networks: Genes and Proteins / Chair: James Schwaber 1) Hamid Ravaee, Ali Masoudi-Nejad, Saeed Omid and Ali Moeni. Improved Immune Genetic Algorithm for Clustering Protein-Protein Interaction Network 2) Tomoya Higashigaki, Kaname Kojima, Rui Yamaguchi, Masato Inoue, Seiya Imoto and Satoru Miyano. Identifying Hidden Confounders in Gene Networks by Bayesian Networks 3) Sohei Ito, Naoko Izumi, Shigeki Hagihara and Naoki Yonezaki. Qualitative analysis of gene regulatory networks by satisfiability checking of Linear Temporal Logic 4) Dongchul Kim, Jean Gao and Chin-Rang Yang. Learning Proteomic Network Structure by Developing a New Hill Climbing Algorithm Bluemley Building / BLSB 107 Bioinformatics: Sequence Algorithms / Chair: Gail Rosen 1) Francisco Claude, Antonio Farina, Miguel Angel Martinez-Prieto and Gonzalo Navarro. Compressed q-gram Indexing for Highly Repetitive Biological Sequences 2) Arpit Gandhi, Raghavendra Adiga and kuruvilla Varghese. Space Efficient Diagonal Linear Space Sequence Alignment 3) Yang Chen and Jinglu Hu. eSBH: An Accurate Constructive Heuristic Algorithm for DNA Sequencing By Hybridization 4) Forrest Sheng Bao, Zhixin Xie and Yuanlin Zhang. Fast Phased Small RNA Cycle Counting Algorithms</p>
<p>5:30 - 7:30 pm</p>	<p>Hamilton Building / 4th Floor POSTER set-up</p>
<p>TUTORIALS 5:30 - 7:30 pm</p>	<p>Bluemley Building / BLSB 101 Hagit Shatkay (Queen's University) and Cathy Wu (University of Delaware) There is no such thing as 'Text Mining': Toward User-Focused Text-Related Tools and Resources Bluemley Building / BLSB 105 James Schwaber (Thomas Jefferson University) Now, "What Is Life?": Gene Networks and Cellular Controls Bluemley Building / BLSB 107 John Goutsias (Johns Hopkins University) Biochemical reaction Systems: Modeling, Identification, and Analysis</p>
<p>8:00pm – 10:00 pm</p>	<p>Hamilton Building / 4th Floor Conference Banquet and Poster Viewing</p>

WEDNESDAY, JUNE 02

7:00 – 8:00 am	Hamilton Building / Connelly Auditorium Lobby Breakfast and Registration
Keynote Presentation 8:00 – 9:00 am	Hamilton Building / Connelly Auditorium (Overflow: Hamilton 505) Prof. James Liao (UCLA) A Novel Modeling Strategy for Dynamic Modeling of Metabolic Systems
Conference Presentations 9:15 – 11:45 am (coffee break @10:15 am) coffee/tea service outside classrooms	Bluemley Building / BLSB 101 Metabolic Engineering / Chair: Terry Papoutsakis and Joanne Kelleher 1) Gregory Stephanopoulos. Pathway optimization for tyrosine and flavonoid biosynthesis in <i>E. coli</i> 2) Joshua Rabinowitz. Integration of carbon and nitrogen metabolism in <i>E. coli</i> 3) Maciek Antoniewicz. Tandem mass spectrometry tools for measuring metabolic fluxes Bluemley Building / BLSB 105 Knowledge Systems & Applications / Chair: Yan Yu 1) Ivan Buzurovic, Tarun Podder, Lei Fu and Yan Yu. Modular Software Design for Brachytherapy Image-guided Robotic Systems 2) Jiawei Zhang, Liping Wang, Xia Liu, Honghai Zhu and Jun Dong. Chinese Cardiovascular Disease Database (CCDD) and its Management Tool 3) Fan Wang and Agrawal Gagan. A Self-Healing Approach for A Domain-Specific Deep Web Search Tool 4) Haiyun Lu, Shamima Banu Bte Sm Rashid, Hao Li, Wee Kheng Leow and Yih-Cherng Liou. Knowledge-Guided Docking of Flexible Ligands to SH2 Domain Proteins Bluemley Building / BLSB 107 Membrane Proteins / Chair: Marta Filizola and Jeffrey Benovic 1) Bryan Roth. A chemical genetic approach using evolved GPCRs for controlling cellular signaling 2) Lee-Yuan Liu-Chen. Regulation of trafficking of kappa opioid receptor along the secretory pathway 3) Lei Shi. Comparative mechanistic studies of neurotransmitter:sodium symporters 4) Marylens Hernandez, Alexander Lachmann, Shan Zao, Kunhong Xiao and Avi Maayan. Inferring the Sign of Kinase-Substrate Interactions by Combining Quantitative Phosphoproteomics with a Literature-Based Mammalian Kinome Network
11:45 am – 1:00 pm	Lunch break (lunch will be served in the Connelly Auditorium Lobby Area)

WEDNESDAY, JUNE 02 (continued)

Keynote Presentation 1:00 – 2:00 pm	Hamilton Building / Connelly Auditorium (Overflow: Hamilton 505) Prof. Antonio Lazcano (Universidad Nacional Autónoma de México) The origin and early evolution of life: can bioinformatics bridge the gap between prebiotic chemistry and deep phylogenies?
Conference Presentations 2:15 – 4:45 pm (coffee break@3:15pm) coffee/tea service outside classrooms	Bluemley Building / BLSB 101 Drug Design #2 / Chair: Dimitris Agrafiotis 1) Tudor Oprea. Black swans and blue pills: Facing uncertainty in the pharmaceutical industry 2) Tomi Sawyer. Stapled α -helical peptides: The twists and turns of drug discovery 3) Kris Brown. Leveraging protein sequence and structure information to help drive drug discovery 4) Dimitris Agrafiotis. A unifying platform for integrative informatics Bluemley Building / BLSB 105 Bioengineering Applications #2 / Chair: Christos Dimitrakopoulos 1) Hiromi Arai, Naoya Tochio, Tsuyoshi Kato, Takanori Kigawa and Masayuki Yamamura. An accurate prediction method for protein structural class from signal patterns of NMR spectra in the absence of chemical shift assignments 2) Jiang Li, Ayyappa Vadlamudi, Shao-Hui Chuang, Xiaoyan Sun, Bo Sun, Frederic McKenzie, Lisa Cazares, Julius Nyalwidhe, Dean Troyer and John Semmes. Combining Prostate Cancer Region Predictions from MALDI Spectra Processing and Texture Analysis 3) Petros Xanthopoulos, Steffen Rebennack, Chang-Chia Liu, Jicong Zhang, Gregory Holmes, Basim Uthman and Panos Pardalos. A novel wavelet based algorithm for spike and wave detection in absence epilepsy 4) Ivan Buzurovic, Ke Huang, Yan Yu and Tarun Podder. Tumor Motion Prediction and Tracking in Adaptive Radiotherapy Bluemley Building / BLSB 107 Regulatory Networks / Chair: Marc Halfon and Stas Shvartsman 1) Marc Halfon. Regulatory Genomics of Drosophila 2) Stas Shvartsman. Quantitative biology of signal transduction in embryos 3) Nir Yakoby. Diversification of BMP signaling in evolving follicular epithelia 4) Albert Erives. Evolutionary encoding of threshold-specific responses to a morphogen 5) Saurabh Sinha. General implementations of quantitative models for predicting the function of regulatory sequences Jefferson Alumni Hall / JAH 207 Modeling and Simulation / Chair: John Goutsias 1) Yang Pu, Saangho Lee, David Samuels, Layne Watson and Yang Cao. Hybrid Modeling and Simulation of Insulin Secretion Pathway in Pancreatic Islets 2) Ferhat Ay, Thang N. Dinh, My T. Thai and Tamer Kahveci. Finding Dynamic Modules of Biological Regulatory Networks 3) W. Garrett Jenkinson and John Goutsias. On Constructing Thermodynamically Consistent Parametrizations of Kinetic Models 4) Jeremy Scheff, Steve Calvano, Stephen Lowry and Ioannis Androulakis. Modeling Circadian Rhythms in Inflammation
TUTORIALS 5:30 - 7:30 pm	Bluemley Building / BLSB 101 Jeffrey Skolnick (Georgia Institute of Technology) On the interplay of physics and evolution in the prediction of protein structure and function Bluemley Building / BLSB 105 Christopher Murray (University of Pennsylvania) & Christos Dimitrakopoulos (IBM TJ Watson Research Center) Graphene and Nanoparticles Bluemley Building / BLSB 107 Marc Halfon (SUNY at Buffalo) & Stas Shvartsman (Princeton University) Systems Biology of Embryonic Development

THURSDAY JUNE 03

7:00 – 8:00 am	Hamilton Building / Connelly Auditorium Lobby Breakfast
Keynote Presentation 8:00 - 9:00 am	Hamilton Building / Connelly Auditorium (Overflow: Hamilton 505) Prof. Thomas Lengauer / (Max Planck Institute) Statistical Models for predicting HIV phenotypes and effectiveness of antiretroviral therapies
Conference Presentations 9:15 – 11:45 am (coffee break @10:15 am) coffee/tea service outside classrooms	<p>Bluemley Building / BLSB 101 Imaging Applications / Chair: Nikolaos Bourbakis 1) Lin Li, Carl Lozar, Mark A. Eckert, Dheeraj Chahal and James Z. Wang. Detection of Mild Cognitive Impairment using Image Differences and Clinical Features 2) Sokratis Makrogiannis, Suraj Serai, Kenneth Fishbein, Willie Laney, Catherine Schreiber, William Ershler, Luigi Ferrucci and Richard Spencer. Automated Quantification of Muscle and Fat in the Thigh from Water-, Fat- and Non-Suppressed MR Images 3) Alexandros Karargyris and Nikolaos Bourbakis. An Elastic Video Interpolation Methodology for Wireless Capsule Endoscopy videos 4) Tarun Podder, Ivan Buzurovic and Yan Yu. Multichannel Robot for Image-guided Brachytherapy</p> <p>Bluemley Building / BLSB 105 Functional Genomics & Gene Expression Analysis / Chair: Greg Gonye 1) Tung Nguyen, Panagiota Foteinou, Steve Calvano, Stephen Lowry and Ioannis Androulakis. Dynamic complexity of the temporal transcriptional regulation program in human endotoxemia 2) Karthik Devarajan, Yan Zhou and Nader Ebrahimi. A supervised approach for predicting patient survival with gene expression data 3) Edward Allen, Jacquelyn Fetrow, David John, James Norris, Stan Thomas and William Turkett. Comparison of Co-Temporal Modeling Algorithms on Sparse Experimental Time Series Data Sets 4) Zeynep Gumus, Fernando Siso-Nadal, Ada Gjyrezi, Iya Khalil, Paraskevi Giannakakou and Harel Weinstein. Quantifying the synergy of drug combinations on gene expression in High-Throughput experiments</p> <p>Bluemley Building / BLSB 107 Bioengineering Applications #3 / Chair: Chris Floudas 1) Lana Garmire, Shankar Subramaniam, David Garmire and Christopher Glass. A clustering approach to identify intergenic non-coding RNA in mouse macrophages 2) Chuang Wu, Andrew Walsh and Roni Rosenfeld. Identification of Viral Protein Genotypic Determinants using Combinatorial Filtering and Active Learning 3) Omar GACI and Stefan BALEV. How to Fold Amino Acid Interaction Networks by Computational Intelligence Methods 4) Vidya Iyer, Ioannis Androulakis, Charles Roth and Marianthi Ierapetritou. Effects of Triadimefon on the Metabolism of Cultured Hepatocytes</p>
Closing Remarks 12:00– 12:30 pm	Hamilton Building / Connelly Auditorium (Overflow: Hamilton 505) Isidore Rigoutsos and Chris Floudas