Division of Biological Chemistry National Awards:
09:00am - 12:00pm USA / Canada - Pacific – Monday, April 5, 2021
Mark Distefano, Organizer, Presider | Ekaterina Pletneva, Organizer, Presider

This symposium honors members of the Division of Biological Chemistry who have won National Awards from the American Chemical Society. The speakers are all award winners.

Introductory Remarks
09:00am - 09:05am USA / Canada - Pacific - April 5, 2021
Evolving virus-like nucleocapsids from nonviral protein cages
09:05am - 09:35am USA / Canada - Pacific - April 5, 2021
Donald Hilvert, Presenter

Introductory Remarks
09:35am - 09:40am USA / Canada - Pacific - April 5, 2021
Targeting heme-fluoride host factors to block viral replication and alert the immune system.
09:40am - 10:10am USA / Canada - Pacific - April 5, 2021
Kevan Shokat, Presenter

Introductory Remarks
10:10am - 10:15am USA / Canada - Pacific - April 5, 2021
Coiled coil control of diverse EGFR functions
10:15am - 10:45am USA / Canada - Pacific - April 5, 2021
Alanna Schepartz, Presenter

Introductory Remarks
10:45am - 10:50am USA / Canada - Pacific - April 5, 2021
Chemistry of entrepreneurship for developing new medicines
10:50am - 11:20am USA / Canada - Pacific - April 5, 2021
Paul Schimmel, Presenter

Introductory Remarks
11:20am - 11:25am USA / Canada - Pacific - April 5, 2021
Structure, dynamics and mechanism of membrane ion channels from NMR
11:25am - 11:55am USA / Canada - Pacific - April 5, 2021
Mei Hong, Presenter

Concluding Remarks
11:55am - 12:00pm USA / Canada - Pacific - April 5, 2021
Monday Afternoon
April 5, 2021

ACS Chemical Biology Award:
01:00pm - 04:00pm USA / Canada - Pacific - April 5, 2021
Mark Distefano, Organizer, Presider | Laura Kiessling, Organizer, Presider | Christina MacLaughlin, Organizer | Ekaterina Pletneva, Organizer

This symposium honors the winner of the ACS Chemical Biology Award and will feature the award winner along with other speakers invited by the journal.

Introductory Remarks
01:00pm - 01:05pm USA / Canada - Pacific - April 5, 2021

Chemical approaches to control and enhance CRISPR-based technologies
01:05pm - 01:35pm USA / Canada - Pacific - April 5, 2021
Amit Choudhary, Presenter

Psychedelics as inspiration for plasticity-promoting neurotherapeutics
01:35pm - 02:05pm USA / Canada - Pacific - April 5, 2021
David Olson, Presenter

Nitrogen-nitrogen bond formation in natural products biosynthesis
02:05pm - 02:35pm USA / Canada - Pacific - April 5, 2021
Katherine Ryan, Presenter

Human milk oligosaccharides as anti-inflammatory agents
02:35pm - 03:05pm USA / Canada - Pacific - April 5, 2021
Steven Townsend, Presenter

Introductory Remarks
03:05pm - 03:10pm USA / Canada - Pacific - April 5, 2021

Deconstructing the bacterial cell wall (by putting it back together)
03:10pm - 04:00pm USA / Canada - Pacific - April 5, 2021
Suzanne Walker, Presenter

Monday Evening
April 5, 2021

Postdoctoral Fellow Symposium Session 1:
05:00pm - 08:00pm USA / Canada - Pacific - April 5, 2021
Mark Distefano, Organizer | Ekaterina Pletneva, Organizer | Sheila David, Presider | Jennifer Petter, Presider
This symposium will focus on research performed by postdoctoral fellows. Monday

**Computational and experimental investigation of selective terpene functionalization**
05:00pm - 05:15pm USA / Canada - Pacific - April 5, 2021
Sebastian Brickel, Presenter | Ivana Drienovská | Andrea Chánique | Volker Sieber | Michael Hofer | Robert Kourist | Shina Kamerlin

**Computationally exploring substrate promiscuity in in-vitro evolved alcohol dehydrogenases**
05:15pm - 05:30pm USA / Canada - Pacific - April 5, 2021
Marina Morató, Presenter | Shina Kamerlin | Thilak Reddy Enugala | Mikael Widersten

**In silico study on the binding of 18F-labeled somatostatin analogs to somatostatin receptor subtype 2**
05:30pm - 05:45pm USA / Canada - Pacific - April 5, 2021
David J. Perez, Presenter | Miguel Avila Rodriguez | Rodrigo Razo Hernandez

**Tale of two carrier proteins: Computer simulations reveal the basis of carrier protein specificity in type II non-ribosomal biosynthesis**
05:45pm - 06:00pm USA / Canada - Pacific - April 5, 2021
Ashay Patel, Presenter | Joshua Corpuz | Larissa Podust | Tony Davis | James McCammon | Michael Burkart

**Development and characterization of a 19F-MRS dopamine sensor**
06:00pm - 06:15pm USA / Canada - Pacific - April 5, 2021
Michael Post, Presenter | Dalibor Sames | David Sulzer

**Understanding β-actin histidine methylation catalyzed by SETD3 from computer simulations**
06:15pm - 06:30pm USA / Canada - Pacific - April 5, 2021
Hong Guo, Presenter | Ping Qian

**Genetic encoding of three distinct noncanonical amino acids using reprogrammed initiator and nonsense codons**
06:30pm - 06:45pm USA / Canada - Pacific - April 5, 2021
Jeffery Tharp, Presenter | Oscar Vargas-Rodriguez | Alanna Schepartz | Dieter Söll

**Versatile interacting peptide tags: A new technology for tracking cellular proteins**
06:45pm - 07:00pm USA / Canada - Pacific - April 5, 2021
Miguel Macias-Contreras, Presenter | Alexa Suyama | Kimberly Beatty

Stapled α-helical peptides: Application in antibacterial therapies
07:00pm - 07:15pm USA / Canada - Pacific - April 5, 2021
Monika Wojciechowska, Presenter | Joanna Trylska | Julia Macyszyn | Joanna Miszkiewicz

Enzyme behaves like switchable nanocolloid at oil-water interface: 10-fold increase in activity
07:15pm - 07:30pm USA / Canada - Pacific - April 5, 2021
Sudip Das, Presenter | Sudarshan Behera | Balasubramanian Sundaram

Case of silicone and sarcoid granulomas in a patient with “highly cohesive” silicone breast implants: Histopathologic and laser Raman microprobe analysis
07:30pm - 07:45pm USA / Canada - Pacific - April 5, 2021
Diane Smith, Presenter | Todor Todorov | Erik de Bakker | Lisette Langenberg | Prabath Nanayakkara | Jose Centeno

Complement inhibitors block complement C3 opsonization and improve targeting selectivity of nanoparticles in blood
07:45pm - 08:00pm USA / Canada - Pacific - April 5, 2021
Hanmant Gaikwad, Presenter

Tuesday Morning
April 6, 2021

Biological Chemistry in Industry:
09:00am - 12:00pm USA / Canada - Pacific - April 6, 2021
Mark Distefano, Organizer, Presider | Rami Hannoush, Organizer, Presider | Ekaterina Pletneva, Organizer
Tags: Co-sponsor - Nominal ORGN: Division of Organic Chemistry

This symposium will feature speakers in industry carrying out research in biological chemistry and will feature a panel discussion on careers in industry.

Introductory Remarks
09:00am - 09:05am USA / Canada - Pacific - April 6, 2021

Drugging mRNA with small molecules
09:05am - 09:33am USA / Canada - Pacific - April 6, 2021
Jennifer Petter, Presenter
Nucleic acids in industry: Living in the world of RNAi therapeutics using biomimetic chemistry
09:33am - 10:01am USA / Canada - Pacific - April 6, 2021
Muthiah Manoharan, Presenter

Intermission
10:01am - 10:11am USA / Canada - Pacific - April 6, 2021

Chemical biology approach to identification of a small-molecule inhibitor of BamA function
10:11am - 10:39am USA / Canada - Pacific - April 6, 2021
Deborah Rothman, Presenter

Withdrawn
10:39am - 11:07am USA / Canada - Pacific - April 6, 2021

Identifying full-length transcripts in eukaryotic mRNA using nanopore sequencing
11:07am - 11:35am USA / Canada - Pacific - April 6, 2021
Ivan Correa, Presenter | Madalee Wulf | Logan Mulroney | Ira Schildkraut | George Tzertzinis | John Buswell | Miten Jain | Hugh Olsen | Mark Akeson | Laurence Ettwiller

Panel Discussion
11:35am - 12:00pm USA / Canada - Pacific - April 6, 2021

Biological Chemists in Industry Lunch
12:00pm - 01:00pm USA / Canada - Pacific - April 6, 2021 | Room: Virtual Room

Tuesday Afternoon
April 6, 2021

Goodman Award:
01:00pm - 04:00pm USA / Canada - Pacific - April 6, 2021
Hilary Crichton, Organizer | Mark Distefano, Organizer | Ekaterina Pletneva, Organizer | Eric Kool, Presider

This symposium honors the winner of the Goodman Award sponsored by Biopolymers (Wiley) and will feature the award winner along with other speakers invited by the journal.

Introductory Remarks
01:00pm - 01:05pm USA / Canada - Pacific - April 6, 2021
AP-endonuclease-1 is a G-quadruplex chaperone
01:05pm - 01:30pm USA / Canada - Pacific - April 6, 2021
Cynthia Burrows, Presenter

Genetic alphabet expansion by creating unnatural base pairs
01:30pm - 01:55pm USA / Canada - Pacific - April 6, 2021
Ichiro Hirao, Presenter

Prebiotic origin of the RNA nucleosides
01:55pm - 02:20pm USA / Canada - Pacific - April 6, 2021
Thomas Carell, Presenter

Intermission
02:20pm - 02:35pm USA / Canada - Pacific - April 6, 2021

Intracellular electrophysiology
02:35pm - 03:00pm USA / Canada - Pacific - April 6, 2021
Yamuna Krishnan, Presenter

Visualizing the catalytic cycle of DNA synthesis by time-resolved x-ray crystallography
03:00pm - 03:25pm USA / Canada - Pacific - April 6, 2021
Nick Chim | Dr. John Chaput, Presenter

Introductory Remarks
03:25pm - 03:30pm USA / Canada - Pacific - April 6, 2021

Molecular probes of DNA repair: Toward new targeted diagnostics and therapies
03:30pm - 04:00pm USA / Canada - Pacific - April 6, 2021
Eric Kool, Presenter

Wednesday Morning
April 7, 2021

Women in Bioconjugate Chemistry Session 1:
09:00am - 11:40am USA / Canada - Pacific - April 7, 2021
Mark Distefano, Organizer | Erin Lavik, Organizer, Presider | Ekaterina Pletneva, Organizer
Tags: Co-sponsor - Nominal MPPG: Multidisciplinary Program Planning Group

This symposium will honor women scientists working in the field of bioconjugate chemistry, sponsored by the journal Bioconjugate Chemistry.
Introductory Remarks
09:00am - 09:05am USA / Canada - Pacific - April 7, 2021

Nuclear imaging-guided combination of targeted radiotherapy and anti-PD-L1 immunotherapy synergistically enhances the antitumor efficacy
09:05am - 09:25am USA / Canada - Pacific - April 7, 2021
Fan Wang, Presenter

Living tissues as inspiration for design of synthetic bioamterials
09:25am - 09:45am USA / Canada - Pacific - April 7, 2021
Shelly Peyton, Presenter

Cellular brain repair for Parkinson’s disease: Is the answer in the (biomaterial) matrix?
09:45am - 10:05am USA / Canada - Pacific - April 7, 2021
Ellis Dowd, Presenter

Mechanically robust photodegradable gelatin hydrogels for 3D cell culture and in situ mechanical modification
10:05am - 10:25am USA / Canada - Pacific - April 7, 2021
Sam Norris | Andrea Kasko, Presenter

Intermission
10:25am - 10:35am USA / Canada - Pacific - April 7, 2021

Efficient polymer-mediated delivery of gene editing payloads through combinatorial design, parallelized experimentation, and machine learning
10:35am - 10:55am USA / Canada - Pacific - April 7, 2021
Ramya Kumar | Ngoc Le | Zhe Tan | Mary Brown | Shan Jiang Jiang | Theresa Reineke, Presenter

Towards precision medicine: Establishing baseline measurements of angiogenic biomarkers on circulating cells
10:55am - 11:15am USA / Canada - Pacific - April 7, 2021
Yingye Fang | Ling Chen | Princess Imoukhuede, Presenter

Delivery of proteins and cells to promote regeneration after rotator cuff injury
11:15am - 11:35am USA / Canada - Pacific - April 7, 2021
Johnna Temenoff, Presenter

Concluding Remarks
11:35am - 11:40am USA / Canada - Pacific - April 7, 2021

Wednesday Afternoon
April 7, 2021
Women in Bioconjugate Chemistry Session 2:
01:00pm - 02:40pm USA / Canada - Pacific - April 7, 2021
Mark Distefano, Organizer | Erin Lavik, Organizer, Presider | Ekaterina Pletneva, Organizer
Tags: Co-sponsor - Nominal MPPG: Multidisciplinary Program Planning Group

This symposium will honor women scientists working in the field of bioconjugate chemistry, sponsored by the journal Bioconjugate Chemistry.

Introductory Remarks
01:00pm - 01:05pm USA / Canada - Pacific - April 7, 2021

Why we need to keep speaking about equity in science
01:05pm - 01:20pm USA / Canada - Pacific - April 7, 2021
Jessica Wade, Presenter

ACS Publications’ Author Name Change Policy and How Publishers are Creating a More Inclusive Environment for Researchers
01:20pm - 01:35pm USA / Canada - Pacific - April 7, 2021
Shaina Lange, Presenter

Panel Discussion: Building Inclusive Environments and Equity in Science to Promote Excellence
01:35pm - 02:35pm USA / Canada - Pacific - April 7, 2021

Concluding Remarks
02:35pm - 02:40pm USA / Canada - Pacific - April 7, 2021

Wednesday Evening
April 7, 2021

Postdoctoral Fellow Symposium Session 2:
05:00pm - 08:00pm USA / Canada - Pacific - April 7, 2021
Mark Distefano, Organizer | Ekaterina Pletneva, Organizer | Christine Chow, Presider | Martina Ralle, Presider
Tags: Co-sponsor - Nominal PROF: Division of Professional Relations

This symposium will focus on research performed by postdoctoral fellows.

G protein-first activation mechanism of β2-adrenergic receptor and Gs protein by a full agonist
05:00pm - 05:15pm USA / Canada - Pacific - April 7, 2021
Amirhossein Mafi, Presenter | Soo-Kyung Kim | William A. Goddard
Inhibition of clostridium difficile TcdA and TcdB toxins with transition state analogues
05:15pm - 05:30pm USA / Canada - Pacific - April 7, 2021
Ashleigh Paparella, Presenter | Briana Aboulache | Rajesh Harijan | Peter Tyler | Vern Schramm

Hydrogen deuterium exchange within adenosine deaminase provides long range protein networks and structural motifs for the thermal activation of active site chemistry
05:30pm - 05:45pm USA / Canada - Pacific - April 7, 2021
Dr Shuaihua Gao, Presenter | Judith Klinman

Dynamical rationale for the robustness of FabD, an acyltransferase involved in E. coli fatty acid biosynthesis
05:45pm - 06:00pm USA / Canada - Pacific - April 7, 2021
Ashay Patel, Presenter | Laetitia Misson | Jeffrey Mindrebo | Tony Davis | James McCammon | Joeph Noel | Michael Burkart

Small molecule tunnels in metalloenzymes viewed as extensions of the active site
06:00pm - 06:15pm USA / Canada - Pacific - April 7, 2021
Rahul Banerjee, Presenter | John Lipscomb

Intermission
06:15pm - 06:30pm USA / Canada - Pacific - April 7, 2021

FUS low complexity domain fibril structure by cryo-electron microscopy and solid-state NMR
06:30pm - 06:45pm USA / Canada - Pacific - April 7, 2021
Myungwoon Lee, Presenter | Ujjayini Ghosh | Kent Thurber | Masato Kato | Robert Tycko

Defining an amyloid link between Parkinson’s disease and melanoma
06:45pm - 07:00pm USA / Canada - Pacific - April 7, 2021
Dexter Dean, Presenter | Jennifer Lee

Effect of amyloid-beta peptides on the lateral diffusion of receptor for advanced glycation endproducts (RAGE) protein
07:00pm - 07:15pm USA / Canada - Pacific - April 7, 2021
Chamari Wijesooriya, Presenter | Emily Smith

Investigating the role of reactive oxygen species in progression of Hepatitis B virus (HBV) infection through epigenetic regulation of DNA damage response pathways
07:15pm - 07:30pm USA / Canada - Pacific - April 7, 2021
Amrita Sengupta, Presenter | Chandrima Das

Targeting SARS-CoV-2 main protease using x-rays, neutrons and computation
07:30pm - 07:45pm USA / Canada - Pacific - April 7, 2021

Daniel Kneller, Presenter | Stephanie Galanie | Gwyndalyn Phillips | Kevin Weiss | Leighton Coates | Andrey Kovalevsky

Antiviral fabrics incorporated silver and copper nanoparticles for the protection against SARS-CoV-2 (COVID-19)
07:45pm - 08:00pm USA / Canada - Pacific - April 7, 2021

Dr Nhu-Nang Vu, Presenter | Phuong Nguyen-Tri

Thursday Morning
April 8, 2021

Chemical Evolution: The Origin of Biological Macromolecules Session 1:
09:00am - 12:00pm USA / Canada - Pacific - April 8, 2021

Christine Conwell, Organizer | Timothy Dittrich, Organizer | Nicholas Hud, Organizer, Presider | Dr. Ramanarayanan Krishnamurthy, Ph.D., Organizer, Presider | Ekaterina Pletneva, Organizer

Tags: Co-sponsor - Nominal MPPG: Multidisciplinary Program Planning Group Co-sponsor - Cooperative MPPG: Multidisciplinary Program Planning Group

This symposium will feature research on the origin of biological macromolecules.

Introductory Remarks
09:00am - 09:10am USA / Canada - Pacific - April 8, 2021

Understanding the emergence of biological macromolecules through potentially natural and primordial alternatives
09:10am - 09:30am USA / Canada - Pacific - April 8, 2021

Dr. Ramanarayanan Krishnamurthy, Ph.D., Presenter

Transliteration of synthetic genetic polymers: Structural anomaly or evolutionary portal for genetic takeover?
09:30am - 09:50am USA / Canada - Pacific - April 8, 2021

Dr. John Chaput, Presenter

Protobackbones and protoamphiphiles: Implications for the origin of early life
09:50am - 10:10am USA / Canada - Pacific - April 8, 2021

Anupam Sawant | Manesh Joshi | Sudha Rajamani, Presenter

Transforming phosphorus from minerals to biomolecules on the prebiotic earth
10:10am - 10:30am USA / Canada - Pacific - April 8, 2021
Heather Abbott-Lyon, Presenter

Self-assembly meets prebiotic chemistry: Progress in the search for the chemical structure of proto-RNA
10:30am - 10:50am USA / Canada - Pacific - April 8, 2021
Nicholas Hud, Presenter

Nucleic acid replication facilitated by viscous environments
10:50am - 11:10am USA / Canada - Pacific - April 8, 2021
Adriana Lozoya Colinas, Presenter | Christine He | Nicholas Hud | Martha Grover

Mars as a prebiotic planet: A Martian RNA world?
11:10am - 11:30am USA / Canada - Pacific - April 8, 2021
Tanner Hoog | Matthew Pawlak | Nathaniel Gaut | Ben Bachan | Aaron Engelhart, Presenter

Q&A
11:30am - 12:00pm USA / Canada - Pacific - April 8, 2021

Thursday Afternoon
April 8, 2021

Chemical Evolution: The Origin of Biological Macromolecules Session 2:
01:00pm - 04:00pm USA / Canada - Pacific - April 8, 2021
Christine Conwell, Organizer | Timothy Dittrich, Organizer | Nicholas Hud, Organizer, Presider | Dr. Ramanarayanan Krishnamurthy, Ph.D., Organizer, Presider | Ekaterina Pletneva, Organizer

Tags: Co-sponsor - Nominal MPPG: Multidisciplinary Program Planning Group

This symposium will feature research on the origin of biological macromolecules.

Introductory Remarks
01:00pm - 01:10pm USA / Canada - Pacific - April 8, 2021

I Get polymerized (with a little help from my friends): Hydroxy acids as key players in prebiotic peptide formation
01:10pm - 01:30pm USA / Canada - Pacific - April 8, 2021
Jay Forsythe, Presenter

What a wonderful (RNA-peptide) world: Mutually stabilizing interactions between proto-peptides and RNA
01:30pm - 01:50pm USA / Canada - Pacific - April 8, 2021
Dr. Luke J. Leman, Presenter
Thioesters pave the path to robust formation of prebiotic peptides
01:50pm - 02:10pm USA / Canada - Pacific - April 8, 2021
Dr. Aikomari Guzman-Martinez, Presenter

Liquid-liquid phase coexistence in polyelectrolyte solutions: Experimental model systems for prebiotic RNA compartmentalization
02:10pm - 02:30pm USA / Canada - Pacific - April 8, 2021
Christine Keating, Presenter

Why did life choose potassium over sodium?
02:30pm - 02:50pm USA / Canada - Pacific - April 8, 2021
Paul Bracher, Presenter

Large-area triboelectric nanogenerator nanoelectrospray ionization
02:50pm - 03:10pm USA / Canada - Pacific - April 8, 2021
Marcos Areces | Yafeng Li | Changsheng Wu | Zhong Wang | Facundo Fernandez, Presenter

Uncovering the Carbon Skeletons of a Protometabolism
03:10pm - 03:30pm USA / Canada - Pacific - April 8, 2021
Dr. Greg Springsteen, Presenter

Q&A
03:30pm - 04:00pm USA / Canada - Pacific - April 8, 2021

Thursday Evening
April 8, 2021

Graduate Student Symposium Session 1:
05:00pm - 08:00pm USA / Canada - Pacific - April 8, 2021
Mark Distefano, Organizer | Ekaterina Pletneva, Organizer, Presider | David Giedroc, Presider
Tags: Co-sponsor - Cooperative PROF: Division of Professional Relations Co-sponsor - Nominal PROF: Division of Professional Relations

This symposium will showcase graduate student speakers presenting their most recent research.

High-throughput discovery of sequences that promote proteolysis in bacteria
05:00pm - 05:15pm USA / Canada - Pacific - April 8, 2021
Patrick Beardslee, Presenter | Karl Schmitz

Machine learning framework for deciphering the allosteric process of circadian clock protein
05:15pm - 05:30pm USA / Canada - Pacific - April 8, 2021
Hao Tian, Presenter | Francesco Trozzi | Brian Zoltowski | Peng Tao

Withdrawn
05:30pm - 05:45pm USA / Canada - Pacific - April 8, 2021

Understanding the improved productivity of self-cycling fermentation – an automated semi-continuous fermentation process – at the transcriptomic level
05:45pm - 06:00pm USA / Canada - Pacific - April 8, 2021
Yusheng Tan, Presenter | Roman Agustin | Dominic Sauvageau

Emerging pathogenic unit of vesicle-cloaked norovirus clusters are resistant to environmental stresses and UV254 disinfection
06:00pm - 06:15pm USA / Canada - Pacific - April 8, 2021
Mengyang Zhang, Presenter

Nucleotide-level resolution of RNA folding interactions within peptide-based complex coacervates
06:15pm - 06:30pm USA / Canada - Pacific - April 8, 2021
Mac Meyer, Presenter | Saehyun Choi | Fatma Pir Cakmak | Phil Bevilacqua | Christine Keating

Residue-level contact reveals modular domain interactions of PICK1
06:30pm - 06:45pm USA / Canada - Pacific - April 8, 2021
Amy Overstreet, Presenter | Yi He

Oligomerization as a general mechanism for enhancing liquid-liquid phase separation
06:45pm - 07:00pm USA / Canada - Pacific - April 8, 2021
Greg Carter, Presenter | Chia-Heng Hsiung | Leman Simpson | Xin Zhang, Presenter

Modular enzyme- and light- activatable cyclopropene-tetrazine ligation for spatiotemporal imaging of biological systems
07:00pm - 07:15pm USA / Canada - Pacific - April 8, 2021
Ting Jiang, Presenter | Adrian Thompson | Pratik Kumar | Wei Huang | Wei-siang Kao | Dr. Scott T. Laughlin, PhD

Protease-catalyzed synthesis of glycopeptides
07:15pm - 07:30pm USA / Canada - Pacific - April 8, 2021
Sarah Black, Presenter | Cody Edson | Filbert Totsingan | Richard Gross

Bimodal actions of the NBTI GSK126 against gyrase and topoisomerase IV
07:30pm - 07:45pm USA / Canada - Pacific - April 8, 2021
X-ray visualized acidosis hydrogel sensor to measure tumor pH
07:45pm - 08:00pm USA / Canada - Pacific - April 8, 2021

Sachindra Kiridena, Presenter | Uthpala Wijayaratna | MD Arifuzzaman | Jeffrey Anker

Friday Morning
April 9, 2021

Emerging Areas and New Methods in Biological Chemistry:
09:00am - 12:00pm USA / Canada - Pacific - April 9, 2021
Mark Distefano, Organizer | Ekaterina Pletneva, Organizer | Sarah Keane, Presider | Anne Frances Miller, Presider
Tags: Co-sponsor - Nominal ORGN: Division of Organic Chemistry

This symposium will provide a forum for presenting new areas of research and new methods in biological chemistry.

Biophysics (the ultra-small and the ultrafast): single-molecule bioelectronics and some fs-Raman of photosynthesis
09:00am - 09:15am USA / Canada - Pacific - April 9, 2021
Subrata Chandra, Presenter | Keshani Pattiya Arachchilage | Juan Manuel Artes Vivancos, Presenter

Mitochondrial thermotrophic energetics: Isothermal utilization of environmental heat energy through transmembrane electrostatically localized protons with asymmetric membrane structures
09:15am - 09:30am USA / Canada - Pacific - April 9, 2021
James Lee, Presenter

Optogenetic and chemogenetic control of an enzymatic reporter of neural activity
09:30am - 09:45am USA / Canada - Pacific - April 9, 2021
Dr. Scott T. Laughlin, PhD, Presenter

Turning on the lights on inhibitory neurotransmission
09:45am - 10:00am USA / Canada - Pacific - April 9, 2021
Mercedes Alfonso-Prieto, Presenter | Alba Nin-Hill | Galyna Maleeva | Alexandre Gomila | Karin Rustler | Daniel Wutz | Carme Rovira | Burkhard Koenig | Pau Gorostiza | Piotr Bregestovski

Hybrid indicators for mapping neuronal action potentials
10:00am - 10:15am USA / Canada - Pacific - April 9, 2021
Investigation of host-microbiota co-metabolism as a new strategy for biomarker discovery: Unique chemical biology tools for metabolomics analysis
10:15am - 10:30am USA / Canada - Pacific - April 9, 2021
Peng Zou, Presenter | Shuzhang Liu | Chang Lin | Yongxian Xu | Huixin Luo | Luxin Peng | Xiangmei Zeng | Huangtao Zheng | Peng Chen

Weifeng Lin | Mario Correia | Abhishek Jain | Louis Conway | Theodosia Vallianatou | Dr. Daniel Globisch, Presenter

Imaging cell signaling with genetically encoded fluorogenic RNA-based sensors
10:30am - 10:45am USA / Canada - Pacific - April 9, 2021
Mingxu You, Presenter

Computational methods for designing peptide-based detection modules for sensing applications
10:45am - 11:00am USA / Canada - Pacific - April 9, 2021
Parisa Hosseinzadeh, Presenter

Revealing structure-penetration relationships for peptide and nucleic acid therapeutics
11:00am - 11:15am USA / Canada - Pacific - April 9, 2021
Joshua Kritzer, Presenter | Kirsten Deprey | Nefeli Batistatou

mRNA delivery of an evolved bispecific single domain antibody to synergize the immune checkpoint blockade therapy
11:15am - 11:30am USA / Canada - Pacific - April 9, 2021
Rihe Liu, Presenter

Development of a robust control strategy to reach target excipient concentrations during drug substance buffer exchange by UFDF
11:30am - 11:45am USA / Canada - Pacific - April 9, 2021
W Tran, Presenter | Andreas Sophocleous | Ryan Muthard | Andre Dumetz

Phosphatase mimicking fullerene nanozymes for osteoregeneration
11:45am - 12:00pm USA / Canada - Pacific - April 9, 2021
Gulcihan Gulseren, Presenter

Friday Afternoon
April 9, 2021

Understanding and Treating Disease:
01:00pm - 04:00pm USA / Canada - Pacific - April 9, 2021
This symposium will feature research from Assistant Professors and industrial scientists who completed their Ph.D. within the past 10 years.

**DnaJC7 binds natively folded structural elements in tau to inhibit amyloid formation**
01:00pm - 01:15pm USA / Canada - Pacific - April 9, 2021
*Lukasz Joachimiak, Presenter*

Withdrawn
01:15pm - 01:30pm USA / Canada - Pacific - April 9, 2021

**Mechanistic investigation of various facets of synucleinopathies using synthetic protein mimetics**
01:30pm - 01:45pm USA / Canada - Pacific - April 9, 2021
*Sunil Kumar, Presenter*

**Structure-based design of estrogen related receptor α agonists for treatment of Alzheimer's disease**
01:45pm - 02:00pm USA / Canada - Pacific - April 9, 2021
*Bahaa El-Dien El-Gendy, Presenter*

**Manipulation of human calcitonin amyloid formation**
02:00pm - 02:15pm USA / Canada - Pacific - April 9, 2021
*Deguo Du, Presenter*

**Iron transport and storage in biological systems: Why we do not rust**
02:15pm - 02:30pm USA / Canada - Pacific - April 9, 2021
*Fadi Bou-Abdallah, Presenter*

**Atypical carbapenems display enhanced anti-mycobacterial activity and differentially degrade on orthologous L,D-transpeptidases**
02:30pm - 02:45pm USA / Canada - Pacific - April 9, 2021
*Philip Mortimer | Noora Al-Kharji | Maha Alqurafi | Rashmi Gupta | Kelsey Melinosky | Rachel Parker | Pojun Quan | Breven Simcox | John Buynak | Kyle Rohde | Leighanne Basta, Presenter*

**Engineering platforms for infectious disease research**
02:45pm - 03:00pm USA / Canada - Pacific - April 9, 2021
*Joel Freundlich, Presenter*

**Uncovering the metabolic potential of mixed microbial cultures**
Discovery of a moonlighting suicide diiron oxygenase involved in tetrahydrofolate biosynthesis in Chlamydia trachomatis
03:15pm - 03:30pm USA / Canada - Pacific - April 9, 2021
Kylie Allen, Presenter

Systematic mapping the landscape of C-terminal proteolytic degrons in E. coli
03:30pm - 03:45pm USA / Canada - Pacific - April 9, 2021
Karl Schmitz, Presenter | Patrick Beardslee

Discovery of novel modulators of nuclear hormone receptors using combined approaches of molecular simulations and structure-based virtual screening
03:45pm - 04:00pm USA / Canada - Pacific - April 9, 2021
Lamees Hegazy, Presenter

Monday Morning
April 12, 2021

Nucleic Acids and Cancer Research:
09:00am - 12:00pm USA / Canada - Pacific - April 12, 2021
Mark Distefano, Organizer | Ekaterina Pletneva, Organizer | Amanda Hargrove, Presider | Rachel Austin, Presider
Tags: Co-sponsor - Nominal TOXI: Division of Chemical Toxicology

This symposium will feature research from scientists who completed their Ph.D. over more than 10 years ago.

Imaging and quantifying intercellular forces with DNA-based fluorescent probes
09:00am - 09:15am USA / Canada - Pacific - April 12, 2021
Mingxu You, Presenter

Characterization of the elastic properties of duplex DNA bound by small molecules
09:15am - 09:30am USA / Canada - Pacific - April 12, 2021
Justin Peters, Presenter

Improving sequencing biases in RNA detection through chemical capping and template switching
09:30am - 09:45am USA / Canada - Pacific - April 12, 2021
Madalee Wulf, Presenter | Sean Maguire | zhiyi sun | Nan Dai | Alice Blondel | Dora Posfai | Keerthana Krishnan | Shengxi Guan | Ivan Correa

Concentration-dependent study of nucleic acid blockers (NABs) in blocking non-specific interactions during nucleic acid detection  
09:45am - 10:00am USA / Canada - Pacific - April 12, 2021  
Sulayman Oladepo, Presenter | Abdualilah Albaiz

Transcriptional regulation of neuronal differentiation program by chromatin reader ZMYND8  
10:00am - 10:15am USA / Canada - Pacific - April 12, 2021  
Chandrima Das, Presenter | Mr. Santanu Adhikary, Graduate Student | Vipin Singh | Siddhartha Roy | Shrikanth Gadad

Efficient, robust, and accurate synthesis and reverse transcription of 2’F modified DNA  
10:15am - 10:30am USA / Canada - Pacific - April 12, 2021  
Aaron Leconte, Presenter

Discovery of novel inhibitors and ligandable sites of bromodomain-containing proteins  
10:30am - 10:45am USA / Canada - Pacific - April 12, 2021  
Brian Smith, Presenter

Biophysical insight into the binding of chlorin p6 to sudlow's site II of human serum albumin  
10:45am - 11:00am USA / Canada - Pacific - April 12, 2021  
Sunita Patel, Presenter

Identification of plausible cancer gene-drug associations and development of the open-access tool GEDA  
11:00am - 11:15am USA / Canada - Pacific - April 12, 2021  
Monica Arroyo, Presenter | Alberto Berral-Gonzalez | Diego Alonso-Lopez | Santiago Bueno-Fortes | Javier De Las Rivas

Cuprous oxide nanoparticles influence the cellular copper trafficking, and selectively induce apoptosis of cancer cell via endoplasmic reticulum stress and mitochondria-mediated signaling pathway  
11:15am - 11:30am USA / Canada - Pacific - April 12, 2021  
Ye Wang, Presenter

Fabrication of the pancreatic adenocarcinoma targeted exosome-inspired vehicles loaded with FOLFIRINOX Agents  
11:30am - 11:45am USA / Canada - Pacific - April 12, 2021  
Sevde Altuntas, Presenter | AHMET KATI
Enhancement of the antiproliferative and cytotoxic effect of AgNPs in combination with chemotherapy drug tamoxifen in ER+ and ER- breast cancer cell lines
11:45am - 12:00pm USA / Canada - Pacific - April 12, 2021
Karla Juarez-Moreno, Presenter | María D. Rivera Guzman | Rafael Vazquez-Duhalt

Monday Afternoon
April 12, 2021

Protein Studies:
01:00pm - 04:00pm USA / Canada - Pacific - April 12, 2021
Mark Distefano, Organizer | Ekaterina Pletneva, Organizer | Phoebe Glazer, Presider | Wayne Outten, Presider

This symposium will feature recent research in the area of post-translational modifications of proteins.

Destabilization of mixed-structure proteins by ionic liquids in aqueous solution: Insights from experiments and simulations
01:00pm - 01:15pm USA / Canada - Pacific - April 12, 2021
Timothy Vaden, Presenter

Importance of protein-water interactions in allostery: Different solvent and conformational entropy contributions to the allostERIC activation and inhibition mechanisms of yeast chorismate mutase
01:15pm - 01:30pm USA / Canada - Pacific - April 12, 2021
Scott Gorman | Dennis Winston | David Boehr, Presenter

Role of protein conformational dynamics in cellular cargo transport
01:30pm - 01:45pm USA / Canada - Pacific - April 12, 2021
Puja Goyal, Presenter

Minimal increments of hydrophobic collapse within the N-terminus of the neuropeptide galanin
01:45pm - 02:00pm USA / Canada - Pacific - April 12, 2021
Michael Giuliano, Presenter

Insights into substrate specificity, regioselectivity and mechanism of two fatty acid hydratases from Lactobacillus acidophilus from mutational and kinetic studies
02:00pm - 02:15pm USA / Canada - Pacific - April 12, 2021
Bekir Eser, Presenter | Yan Zhang | Michal Poborsky | Negin Hashemi | Sune Schubert | Georgios Kougioumtzoglou | Emilie Dam Rosenberg | Zekiye Eser |
Mass spectrometry provides unique insights into the biophysical and catalytic properties of a lanthipeptide synthetase
02:15pm - 02:30pm USA / Canada - Pacific - April 12, 2021
Christopher Thibodeaux, Presenter

Asymmetric effects of rotor mutations on H+ translocation in E. coli ATP synthase
02:30pm - 02:45pm USA / Canada - Pacific - April 12, 2021
Ryan Steed, Presenter | Rashmi Shrestha | Benjamin Pressley | Michaela Dodd | Samantha Shepard

Rieske business: Engineering rieske dioxygenases
02:45pm - 03:00pm USA / Canada - Pacific - April 12, 2021
Jordan Froese, Presenter

Mechanism of action of flavin-monooxygenases: Role of flavin dynamics in NADP(H) loading and unloading.
03:00pm - 03:15pm USA / Canada - Pacific - April 12, 2021
Pablo Sobrado, Presenter | Ashley Campbell | John Tanner

Activation and subcellular localization of insulin-degrading enzyme
03:15pm - 03:30pm USA / Canada - Pacific - April 12, 2021
David Rodgers, Presenter | Louis Hersh

Association of myeline basic protein with n-alkylbenzenes: A computational docking experiment
03:30pm - 03:45pm USA / Canada - Pacific - April 12, 2021
Abul Hussam | Ume Tahir | Irina Hashmi, Presenter

Docking studies on SARS-CoV2 nsp16 and tyrosinase: Repurposing drugs and discovery of novel enzymatic activities
03:45pm - 04:00pm USA / Canada - Pacific - April 12, 2021
David Snyder, Presenter

Monday Evening
April 12, 2021

Graduate Student Symposium Session 2:
05:00pm - 08:00pm USA / Canada - Pacific - April 12, 2021
Mark Distefano, Organizer | Ekaterina Pletneva, Organizer | Phil Bevilacqua, Presider | Liliya Yatsunyk, Presider
This symposium will showcase graduate student speakers presenting their most recent research.

**Computer-aided discovery of novel human RORγ inverse agonists**
05:00pm - 05:15pm USA / Canada - Pacific - April 12, 2021
*Mian Huang, Presenter | Shelby Bolin | Hannah Miller | Anna Dykeman | Ho Leung Ng*

**Leveraging oxidative stress to regulate redox balance-based, in vivo growth selections for oxygenase engineering**
05:15pm - 05:30pm USA / Canada - Pacific - April 12, 2021
*Sarah Maxel, Presenter | Edward King | Yulai Zhang | Ray Luo | Han Li*

**Discovery of a bicyclic peptide inhibitor of mutant K-Ras**
05:30pm - 05:45pm USA / Canada - Pacific - April 12, 2021
*Marina Buyanova, Presenter | Shurui Cai | Jahan Cooper | Heba Salim | Qi-En Wang | Dehua Pei*

**Rational design of 17β-hydroxysteroid dehydrogenase type3 for improving testosterone production with an engineered Pichia pastoris GS115**
05:45pm - 06:00pm USA / Canada - Pacific - April 12, 2021
*juanjuan Ding, Presenter | shengping You | wei Qi | Jiaxing Zhang*

**Targeting menaquinone biosynthesis as an antichlamydial strategy**
06:00pm - 06:15pm USA / Canada - Pacific - April 12, 2021
*Brieanne Dudiak, Presenter | Tri Nguyen | Dewey McCafferty*

**Engineering Src homology 2 domains for the study of protein tyrosine O-sulfation**
06:15pm - 06:30pm USA / Canada - Pacific - April 12, 2021
*Justin Lawrie, Presenter | Anya Morozov | Wei Niu | Jiantao Guo*

**Single-molecule analysis of branch migration kinetics**
06:30pm - 06:45pm USA / Canada - Pacific - April 12, 2021
*Roaa Mahmoud, Presenter | Soma Dhakal*

**A whole cell biofilm model for photodynamic inactivation**
06:45pm - 07:00pm USA / Canada - Pacific - April 12, 2021
*Andrew Freiburger, Presenter | Heather Buckley*

**Antimicrobial α-defensins as broad-spectrum Inhibitors against amyloid formation**
07:00pm - 07:15pm USA / Canada - Pacific - April 12, 2021
Gold nanoparticles as a delivery vehicle to ErbB2+ breast cancer
07:15pm - 07:30pm USA / Canada - Pacific - April 12, 2021
Samantha Kouneski, Presenter | Elana Ehrlich | Mary Devadas

Site-specific tryptophan probes of TDP-43 C-terminal domain amyloid formation
07:30pm - 07:45pm USA / Canada - Pacific - April 12, 2021
Ms. Sydney O. Shuster, Presenter | Jennifer Lee

Investigating the pKa of the nucleophilic O2′ within the hairpin ribozyme
07:45pm - 08:00pm USA / Canada - Pacific - April 12, 2021
Andrew Veenis, Presenter | Pengfei Li | Alexander Soudackov | Sharon Hammes-Schiffer | Phil Bevilacqua