

4<sup>th</sup> Annual Engelpalooza  
12 October 2022



Schedule

10:30 a.m.	Welcome and opening remarks
10:35 a.m.	Keynote presentation by Dr. Vidhya Sivakumaran (Intelligent Medical Objects)
11 a.m.	Poster session I
12 p.m.	Poster session I ends; <i>setup for next session</i>
12:15 p.m.	Poster session II
1:15 p.m.	Poster session II ends; <i>setup for next session</i>
1:30 p.m.	(Abbreviated) Poster session III
2:00 p.m.	End of Engelpalooza

Poster session I: Presentations from 11 a.m. until 12 p.m.

1	“Molecular basis for the interaction of Phafin2 with the actin network during micropinocytosis” <b>Hannah Cannon</b> , Parita Shah, Mahmudul Hasan, Tiffany Roach and Daniel Capelluto† (Dept. of Biological Sciences; Bowers Fellowship Program [School of Neuroscience])
2	“PDGF/VEGF-related receptor PVR in mosquitoes is involved in juvenile hormone signaling from the plasma membrane” <b>Maria Dorodnitsyna</b> and Jinsong Zhu† (Fralin SURF program)
3	“Glycan characterization using trapped ion mobility mass spectrometry” <b>David Harris</b> , William Ray and Richard Helm† (GlycoMIP)
4	“Using molecular docking to determine the drug targets of Cp*Rh piano stool complexes in SARS-CoV-2” <b>Marion LoPresti</b> and Anne Brown† (Fellowship, Dept. of Biochemistry)
5	“Characterization of mutations in AHASS2 in Arabidopsis” <b>Gabriel Mendelson</b> and Guillaume Pilot† (School of Plant and Environmental Sciences)
6	“Identification and characterization of residues involved in the catalysis of CreE, a nitro-forming flavin-dependent monooxygenase” <b>Kathryn Paasch</b> , Sydney Johnson and Pablo Sobrado† (Dept. of Biochemistry)
7	“The interaction between auxin and phosphate signaling pathways in plants” <b>Madison Payne</b> , Joseph Taylor, Joseph Haymaker and Bastiaan Bargmann† (VT-REEL)
8	“Amphibian feeding mosquitoes are potential vectors of viruses” <b>Joanna Reinhold</b> , Aqsa Fazal, Jonathan Auguste† and Chloe Lahondere† (Dept. of Biochemistry; SURF)
9	“Assessing physiological responses of various winter wheat cultivars as means to better understand nitrogen uptake and metabolism” <b>Shirin Sayani</b> , Lauren Kerwien and Guillaume Pilot† (Fralin SURF program)
10	“Structure-activity relationship studies of SPNS2 inhibitors” <b>Sarah Seay</b> and Daniel Foster† (Dept. of Chemistry)
11	“The biochemical characterization of a novel self-sacrificing metalloenzyme from <i>Chlamydia trachomatis</i> ” <b>Spenser Stone</b> , Eric Truong and Kylie Allen† (Dept. of Biochemistry)

12	“Antimicrobial discovery from bacteria associated with Puerto Rican moon snail eggs” <b>Samantha Tollefson</b> , Erik Payne, Carla Mengatti, and Emily Mevers† (Dept. of Chemistry)
13	“Determining the feeding success of herbivorous insects on <i>Arabidopsis thaliana</i> plants with altered inositol pyrophosphates” <b>Ash VanWinkle</b> , Caitlin Cridland and Glenda Gillaspay† (Dept. of Biochemistry; Translational Plant Sciences Center)
14	“Determining the role of radical SAM enzymes in lipid and methanopterin biosynthesis pathways in archaea” <b>Ryan Schurr</b> , Thuc-Anh Dinh, Richard Helm and Kylie Allen† (Dept. of Biochemistry)
15	“Mungbean [ <i>Vigna radiata</i> (L.) Wilczek] potential as a multi-purpose crop for livestock forage and human consumption” <b>Kiara Randhawa</b> , Jessica Wilbur, Ozzie Abaye† and Bo Zhang† (School of Plant and Environmental Sciences)
16	“Characterization of small molecules using high resolution mass spectrometry” <b>Riley Leathem</b> , <b>Overton Temple</b> , Sherry Hildreth and Richard Helm† (Dept. of Biochemistry)
21	“Sugar-feeding by invasive mosquitoes on ornamental plants” <b>Forde Upshur</b> (available in poster session III), Mikhyle Fehlman, Vansh Parikh and Chloe Lahondere† (Dept. of Biochemistry)

Presenter(s) in bold. †Faculty mentor. Program or department under which research conducted in parentheses.

Poster session II: Presentations from 12:15 p.m. to 1:15 p.m.

1	“Recombinant expression and characterization of McrD, a methyl-coenzyme M reductase accessory protein in methanogens” <b>Thuc-Anh Dinh</b> , Aleksei Gendron and Kylie Allen† (Dept. of Biochemistry)
2	“Molecular dynamics simulations of the G-quadruplex present in the human-VEGF promoter region” <b>Bekah Fogarty</b> , Haley Michel, Sam Farrokhpoor and Justin Lemkul† (Dept. of Biochemistry)
3	“High-throughput drug screen to identify enhanced therapeutics that target the zonal peptidoglycan synthesis of <i>Borrelia burgdorferi</i> to treat Lyme disease” <b>Maegan Gabby</b> and Brandon Jutras† (Dept. of Biochemistry)
4	“Using in-silico techniques to design novel antagonists for propanediol dehydratase” <b>Christa Greatorex-Potter</b> and Anne Brown† (Dept. of Biochemistry)
5	“Identification of key amino acids in helix B of Brome Mosaic Virus replication protein 1a in protein targeting” <b>Meghana Kamineni</b> and Anne Brown† (Dept. of Biochemistry)
6	“Characterization of inhibitors for flavin-dependent monooxygenase siderophore A (SidA)” <b>Alysa Lanier</b> and Pablo Sobrado† (Dept. of Biochemistry)
7	“Functional characterization of serine hydrolases essential for Plasmodium growth” <b>Jiapeng Liu</b> , Christie Dapper, Katie Fike and Michael Klemba† (Dept. of Biochemistry)
8	“Modified pectin as a biodegradable polystyrene substitute” <b>Mikaela LoBosco</b> , Ryan Porell and Richard Helm† (Virginia Tech SURF, GlycoMIP)

9	“Identification of residues interacting with Fbsl, a flavin-dependent monooxygenase” <b>Emily Mechnick</b> , Noah Lyons and Pablo Sobrado† (Dept. of Biochemistry)
10	“A tale of two loops: Characterization of two G-quadruplexes in the HIV-1 long terminal repeat using polarizable molecular dynamics simulations” <b>Haley Michel</b> and Justin Lemkul† (Dept. of Biochemistry)
11	“Comparative analyses of phage-plasmid hybrids within the environment and the human gut” <b>James Mullet</b> , Connor Brown, Liqing Zhang and Amy Pruden† (Dept. of Civil and Environmental Engineering)
12	“Going through changes: Effects of phosphoserine on secondary structure and dipole moment” <b>Laura Gil Pineda</b> , Marcelo Poletto, Darcy Davidson and Justin Lemkul† (Dept. of Biochemistry)
13	“Characterizing <i>Fusobacterium nucleatum</i> complement resistance” <b>Dylan Reil</b> , Kevin Williams, Tam Nguyen, and Daniel Slade† (Dept. of Biochemistry)
14	“Towards the automated synthesis of rhamnase-containing glycans” <b>Tantima Sattayaphanichkul</b> , Brady Hall, and Richard Helm† (GlycoMIP)
15	“Investigating the self-sacrificing enzyme in the folate biosynthesis pathway of <i>Nitrosomonas europaea</i> ” <b>Eric Truong</b> , Spenser Stone and Kylie Allen† (Dept. of Biochemistry)
16	“Manure microbiomes in earthen pit and concrete storage: Nitrogen and carbon transformation processes” <b>Bela H. Khairunisa</b> , Jactone A Ogejo, Usha Loganathan and Biswarup Mukhopadhyay† (Dept. of Biochemistry)
17	“The unusual peptidoglycan cell wall of <i>Borrelia burgdorferi</i> and its role in Lyme disease pathogenesis” <b>Mecaila McClune</b> , Jules Dressler, Juselyn Tupik, and Brandon Jutras† (Dept. of Biochemistry)
18	“Functional implications of partner proteins in thioredoxin system of <i>Methanocaldococcus jannaschii</i> , a hyperthermophilic methanogenic archaeon from deep sea hydrothermal vents” <b>Christian Heryakusuma</b> , Dwi Susanti, Endwang Purwantini and Biswarup Mukhopadhyay† (Dept. of Biochemistry; Genetics, Bioinformatics and Computational Biology program)

Presenter(s) in bold. †Faculty mentor(s). Program or department under which research conducted in parentheses.

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Funding for this event generously provided by Virginia Tech’s Department of Biochemistry.

A special thanks to the Howard Hughes Medical Institute Inclusive Excellence Program.