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20TH ANNUAL

APRIL 14 - 17, 2025

HILTON BAYFRONT | **SAN DIEGO, CA + VIRTUAL**

Drug Discovery Chemistry

Optimizing Small Molecules for Tomorrow's Therapeutics

APRIL 14, 2025	APRIL 15-16, 2025	APRIL 16-17, 2025
Degraders & Molecular Glues: Beyond Oncology	Degraders & Molecular Glues - Part 1	Degraders & Molecular Glues - Part 2
Covalent & Induced Proximity-Based Therapies	Fragment-Based Drug Discovery	Protein-Protein Interactions
Generative AI & Predictive Modeling	AI/ML for Early Drug Discovery - Part 1	AI/ML for Early Drug Discovery - Part 2
Drug Discovery in Women's Health	GLP1 & Oral Peptides	DNA-Encoded Libraries
RNA-Modulating Small Molecule Drugs	Emerging Technologies for Discovery Chemistry	Drugging Transcription Factors & Regulators
	The Medicinal Chemistry-Pharmacology Interface	Drug Exposure at the Target

PLENARY KEYNOTES

Applying Diverse Small Molecule Strategies to Difficult Targets: Drugging BTK for (Neuro)Immunology

Christopher J. Helal, PhD, Vice President & Head, Medicinal Chemistry, Biogen

Simplifying Synthesis with Radicals

Phil Baran, PhD, Chair & Professor, Department of Chemistry, Scripps Research Institute

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CONFERENCE AT-A-GLANCE

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RNA-Modulating Small Molecule Drugs	Emerging Technologies for Discovery Chemistry	Drugging Transcription Factors & Regulators
Pre-Conference In-Person Dinner Short Courses*	The Medicinal Chemistry-Pharmacology Interface	Drug Exposure at the Target

In-Person Dinner Short Courses*

**Premium or Separate Registration Required*

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Simplifying Synthesis with Radicals

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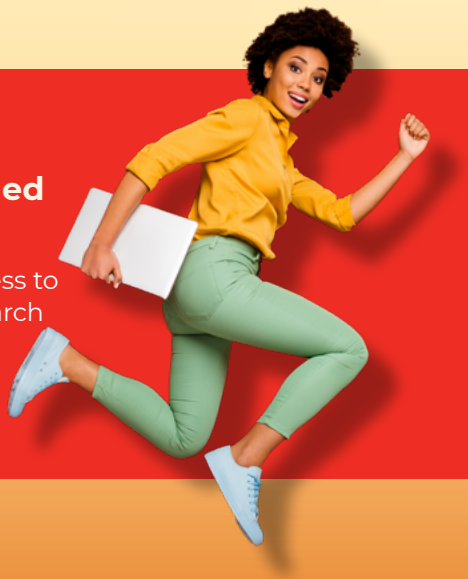
TRACK-HOPPING



Attendees at Drug Discovery Chemistry are encouraged to "track-hop" between concurrent sessions:

Though you register for a particular conference, in reality you gain access to all concurrent conferences. For the best value and to best fit your research needs, select a Premium registration that gives you access to all 10 conferences, 5 symposia, plus 2 short courses over four days of programming. Your registration also includes On-Demand access for one year to access these concurrent conferences.

DINNER SHORT COURSES*

APRIL 14 & 16, 2025
HILTON BAYFRONT | SAN DIEGO, CA

MONDAY, APRIL 14 6:00-8:30 PM

SC1: Protein Degraders: A Beyond Rule of Five Space and in vitro ADME Perspective

Instructors:

John Erve, PhD, President, Jerve Scientific Consulting

Stefanus Steyn, PhD, Research Fellow, Pharmacokinetics Dynamics & Metabolism, Pfizer

This course focuses on proteolysis targeting chimeras (PROTACs) and will cover topics relevant to developing them as oral therapeutics. Topics to be covered in this part of the course will include their physicochemical properties and how these influence solubility and permeability and assays to determine polarity. We will also examine ADME topics focusing on *in vitro* assays including stability assays, transporters, drug-drug interactions (DDIs), Cytochrome P450 (CYP450) inhibition, etc.

SC2: Fragment-Based Drug Design: Advancing Tools and Technologies

Instructors:

Ben J. Davis, PhD, Research Fellow, Biology, Vernalis R&D Ltd.

Daniel A. Erlanson, PhD, Chief Innovation Officer, Innovation and Discovery, Frontier Medicines Corporation

This course aims to introduce the fundamentals of Fragment-Based Lead Discovery (FBLD) to attendees. The first section will focus on the concepts of using fragments for hit generation. Special emphasis will be placed on practical pitfalls and the many ways to advance fragments to leads and drugs. The second part of the course will discuss the variety of fragment screening methods and when they are best applied. The composition of fragment libraries will also be discussed in detail. The attendees should come away from this course with a solid understanding of what FBLD is and how to apply it.

SC3: Fundamentals of Generative AI for Drug Discovery

Instructors:

Parthiban Srinivasan, PhD, Professor and Director, Centre for AI in Medicine, Vinayaka Mission's Research Foundation, India

Petrina Kamya, PhD, Global Head of AI Platforms & Vice President, Insilico Medicine; President, Insilico Medicine Canada

Deep generative modeling is rapidly transforming *de novo* drug discovery, streamlining the entire process. This course aims to explain the potential of AI, machine learning, and generative AI models in creating tailored molecules with specific properties. It explores the fundamentals of Variational Autoencoders, Generative Adversarial Networks, Transformers, Large Language Models (LLMs), BERT, and GPT models in the context of drug discovery, highlighting their crucial role in reshaping the pharmaceutical landscape. Along the way, we'll dissect three pivotal techniques for biopharma specific LLMs: prompt engineering, retrieval augmented generation (RAG), and fine-tuning. This course is designed for medicinal chemists, molecular modeling users, and project managers seeking to harness the capabilities of modern Generative AI concepts and integrate them into their work.

SC4: Detecting Target Engagement: Technology Innovations

Instructors:

Hans-Peter N. Biemann, PhD, Distinguished Scientist, Integrated Drug Discovery, Sanofi

Jonathan Brooks, Principal Scientist, Inflammation & Remodeling, Pfizer Inc.

Elmar Nurmemmedov, PhD, MBA, Co-Founder & CEO, CellarisBio

This course covers a range of biochemical or biophysical tools adapted to gauge interaction between a compound of interest (either a tool compound or potential therapeutic) with its intended disease-related molecular target. Most of the applications are employed at the hit-confirmation steps in the drug lead generation process, to discover small molecule compounds that engage difficult-to-drug protein targets. Applications to primary screening steps may also be covered.

WEDNESDAY, APRIL 16 6:15-8:45 PM

SC5: Protein Degraders: An in vivo ADME and Safety Perspective

Instructors:

Donglu Zhang, PhD, Senior Fellow, DMPK, Genentech Inc.

John Erve, PhD, President, Jerve Scientific Consulting

This course focuses on proteolysis targeting chimeras (PROTACs) and will cover topics relevant to developing them as therapeutics. Topics to be covered in this part of the course will include looking at what is known about how PROTACs are metabolized *in vivo* and strategies to deliver them with adequate PK/PD. The unique mechanism of action of PROTACs gives rise to some drug safety issues not seen in small molecules, which will be discussed. Finally, we will explore the possible relevance of circadian rhythm to protein degradation and PROTACs.

SC6: Chemical Biology for Covalent Drug Discovery, Phenotypic Screening, and Target Deconvolution

Instructors:

Paul Brennan, PhD, Professor, Nuffield Department of Medicine, University of Oxford

Brent Martin, PhD, Senior Director, Chemical Biology, Odyssey Therapeutics

Angelo Andres, Senior Scientist, Chemical Biology, AstraZeneca Pharmaceuticals

This course is designed to provide an overview and best practices in the use of chemical biology probes and assays that have been developed for applications in early drug discovery. Chemists and biologists working in lead generation, assay development, phenotypic screening, target discovery and deconvolution, target engagement and mechanism-of-action (MoA) studies will all benefit from attending this course. The instructors will share their knowledge and expertise around the use of various technologies and chemistries, and there will be time for open discussion and exchange of ideas.

SC7: AI Applications in Drug Development: Strategies for Innovation and Integration

Instructor:

Arvind Rao, PhD, Associate Professor, Department of Computational Medicine and Bioinformatics, University of Michigan

This course is intended to facilitate harnessing the transformative potential of artificial intelligence (AI) in pharmaceutical R&D. Through engagement with real-world case studies, we intend to collaboratively gain insights into state-of-the-art technologies and develop strategies to effectively integrate AI into pharma R&D processes. This course is intended to equip the attendee with the knowledge to optimize their R&D pipeline, enhance strategic decision-making, and position their organization at the forefront of AI-driven innovation in pharmaceuticals.

SC8: Principles of Drug Design: Ligand-Receptor Interactions and More

Instructor:

Maricel Torrent, PhD, Principal Research Scientist, Computational Drug Discovery, AbbVie, Inc.

This course provides an overview of protein-ligand interactions and drug design principles. The presentation is targeted to medicinal chemists. The course starts by covering hydrophobic, H-bonding and electrostatic interactions. Then the course moves into coverage of specialized topics such as conformation analysis, pi-stack, cation-pi, halogen bonding, protein-protein interface, and covalent inhibition. Medicinal chemistry case studies are incorporated.

SC9: DNA-Encoded Libraries

Instructors:

Svetlana Belyanskaya, PhD, Co-Founder, DEL Source; former Vice President, Biology, Anagenex

Ghotas Evindar, PhD, Co-Founder & President, DEL Source; former DEL Platform Senior Manager and Group Leader, GSK

This course provides an overview of DNA-Encoded Library (DEL) screening platforms, discusses common selection strategies for identifying novel hits from DEL campaigns and delves into parameters for building a library collection. The instructors will also cover strategic considerations in using DEL selection data to accelerate hit-to-lead steps in drug discovery.

SPONSORSHIP & EXHIBIT OPPORTUNITIES

CHI offers comprehensive packages that can be customized to your budget and objectives. Sponsorship allows you to achieve your goals before, during, and long after the event. Packages may include presentations, exhibit space and branding, as well as the use of delegate lists. Signing on early will maximize your exposure to qualified decision-makers and drive traffic to your website in the coming months.

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INVITATION-ONLY VIP DINNER/HOSPITALITY SUITE

Select specific delegates from the pre-registration list to attend a private function at an upscale restaurant or a reception at the hotel. From extending the invitations, to venue suggestions, CHI will deliver your prospects and help you make the most of this invaluable opportunity

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CHI will set up 6-8 in-person meetings during the conference, based on your selections from the advance registration list. Our staff will handle invites, confirmations and reminders, and walk the guest over to the meeting area. This package also includes a meeting space at the venue, complimentary main-conference registrations, branding, an 8'x10' exhibit space, and more.

EXHIBIT

Exhibitors will enjoy facilitated networking opportunities with qualified delegates, making it the perfect platform to launch a new product, collect feedback, and generate new leads. Exhibit space sells out quickly, so reserve yours today!

ADDITIONAL BRANDING AND PROMOTIONAL OPPORTUNITIES ARE AVAILABLE, INCLUDING:

- » Conference Tote Bags
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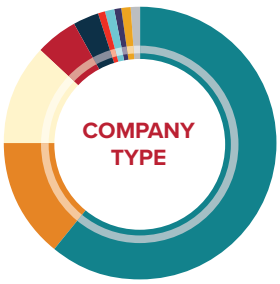
2024 ATTENDEE DEMOGRAPHICS



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Pharma	14%
Academic	12%
Services	5%
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CRO	1%
Financial	1%
Government	1%
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Societies	1%

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PTC Therapeutics Inc, Exec Dir
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Servier Pharmaceuticals, Principal Scientist, Mfg Science & Technology
St Jude Childrens Research Hospital, Grp Leader, Chemical Biology Ctr
Takeda, Dir & Toxicologist, Drug Safety Research & Evaluation
Tufts University, Assoc Prof, Chemistry
Vertex Pharmaceuticals Europe R&D Ltd, Scientist, Medicinal Chemistry & Chemical Biology

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Inaugural

Degraders & Molecular Glues: Beyond Oncology

Designing and Optimizing PROTACs and Glue Modalities for Diverse Therapeutic Indications

MONDAY, APRIL 14

12:00 pm Pre-Conference Symposium Registration

EXPLORING NEW DEGRADATION PATHWAYS & MODALITIES

1:00 Welcome Remarks

1:10 Chairperson's Remarks
Mary Matyskiela, PhD, Vice President, Molecular Sciences, Neomorph, Inc.

1:15 FEATURED PRESENTATION: Destruction with High Specificity: Mechanisms of Substrate Selection and Processing by the 26S Proteasome and p97/Cdc48
Andreas Martin, PhD, Professor and HHMI Investigator, Molecular & Cell Biology, University of California Berkeley
Our biochemical, single-molecule, and cryo-EM structural studies provide important mechanistic insights into the processing of ubiquitinated substrates by the 26S proteasome and the p97/Cdc48 protein unfoldase. We also recently characterized a novel mode of ubiquitin-independent, NUB1-cofactor mediated degradation by the human proteasome, whereby the ubiquitin-like modifier FAT10 functions in substrate delivery and engagement by the proteasomal ATPase motor, offering new opportunities for targeted protein degradation independent of ubiquitin or p97.

2:15 Presentation to be Announced

2:45 Sponsored Presentation *(Opportunity Available)*

3:15 Networking Refreshment Break

3:30 Molecular Glue, Mitochondrial Biogenesis, Neurodegeneration, and Aging
Tauseef Butt, PhD, President & CEO, Progenra, Inc.
Misfolded proteins and protein aggregates damage mitochondria leading to cell death. Progenra has discovered a potent molecular glue that activates parkin (E3 ligase)/PINK1 (kinase) signaling pathway. Phosphorylation of ubiquitin and parkin E3 ligase by PINK1 orchestrates mitophagy as well as initiating mitochondrial gene transcription and translation (mitobiogenesis). Healthy mitochondrial function plays a critical role in protection against Alzheimer's and Parkinson's diseases and aging. Mechanisms of the glue will be discussed.

4:00 Targeting 14-3-3/CRAF Complexes with Molecular Glues: Applications in Oncology and RASopathies
Markella Konstantinidou, PhD, Staff Scientist, Laboratory of Dr. Michelle Arkin, Department of Pharmaceutical Chemistry, University of California, San Francisco
The hub protein 14-3-3 plays a pivotal role in controlling CRAF function in the MAPK pathway. 14-3-3 binds to pS259, maintaining CRAF in an inactive state, thus preventing downstream signaling. Mutations in the residues surrounding the pS259 site occur in developmental disorders termed "RASopathies." We have developed molecular glues targeting the 14-3-3/CRAF wild-type autoinhibited complex with applications in RAS-driven cancers, as well as molecular glues targeting the mutated RASopathy complexes.

4:30 PANEL DISCUSSION: Session Speakers Discuss Emerging Applications of Degraders & Glues
Moderator: Mary Matyskiela, PhD, Vice President, Molecular Sciences, Neomorph, Inc.

5:15 Close of Symposium

5:30 Dinner Short Course Registration

6:00 Dinner Short Course*
SC1: Protein Degraders: A Beyond Rule of Five Space and *in vitro* ADME Perspective
*Premium Pricing or separate registration required. See Short Courses page for details.

4th Annual

Covalent & Induced Proximity-Based Therapies

Innovative Chemistries and Assays for Studying and Modulating Cellular Interactions

MONDAY, APRIL 14

12:00 pm Pre-Conference Symposium Registration

EMERGING COVALENT INHIBITORS & STRATEGIES

1:00 Welcome Remarks

1:10 Chairperson's Remarks

Daniel A. Erlanson, PhD, Chief Innovation Officer, Innovation and Discovery, Frontier Medicines Corporation

1:15 Hydralazine Covalently Inhibits Cysteamine Dioxygenase to Attenuate GPCR Signaling and Glioblastoma Growth

Megan L. Matthews, PhD, Assistant Professor, Chemistry, University of Pennsylvania

Hydralazine (HYZ) has been used clinically for 70 years, but its mechanism of action (MOA) is still unknown. The talk will show how HYZ covalently and irreversibly inhibits a single target and achieves remarkable selectivity across cells and tissues. It connects an old drug to its target, reveals the mechanism of its therapeutic effect, and shows it can be now be repurposed and further optimized to treat neurological brain disorders.

1:45 Identification of VVD-214/RO7589831: A Clinical-Stage, Covalent Allosteric Inhibitor of WRN Helicase for the Treatment of MSI-High Cancers

Shota Kikuchi, PhD, Director, Chemistry, Vividion Therapeutics

WRN helicase is a promising target for treating cancers with microsatellite instability (MSI) due to its essential role in resolving deleterious non-canonical DNA structures that accumulate in cells with faulty mismatch repair mechanisms. Here we describe the medicinal chemistry optimization of potency, ADME, and PK properties of chemoproteomic screening hits, which resulted in identification of VVD-214/RO7589831 (Vividion/Roche), a clinical-stage, covalent allosteric inhibitor of WRN.

2:15 Discovery of RAS(ON) Mutant-Selective Covalent Tri-Complex Inhibitors

Allison Zhang, PhD, Senior Scientist I, Structural Biology & Biophysics, Revolution Medicines

We designed a series of natural product-inspired molecules that bind and remodel the surface of cyclophilin A to create a binary complex with high affinity for the active, GTP bound(ON) state of RAS. The resulting tri-complex sterically blocks RAS-effector interactions to disrupt downstream signaling. Structure-guided optimization enabled the development of orally bioavailable covalent inhibitors including the investigational agents, RMC-6291(RAS(ON) G12C-selective) and RMC-9805(RAS(ON)G12D-selective), both of which display profound antitumor activity in preclinical models.

2:45 In-Solution Quantification of Small-Molecule Protein Interactions Using FIDA Lambda Dynamics in Drug Discovery

Fidabio The Power of 1st Principle

Henrik Jensen, CSO & Founder, Fida Biosystems ApS

Based on "1st principle" biophysics, Flow Induced Dispersion Technology (FIDA) bridges the gap between structural and functional information of biomolecules. FIDA developed the capability of generating kon and koff rates in a fully in-solution assay without any immobilization to surfaces. Fida is able to measure in-solution small-molecule binding with 3 different orthogonal measurements in addition to quantifying molecule sizing (hydrodynamic radius), aggregation, PDI, and viscosity.

3:00 QuValent: QM/MM FEP & Transition State Analysis for Covalent Drug Design with pharma-suitable throughput QSIMULATE

David Pearlman, VP Product, Product, QSimulate

Despite increasing interest in covalent drugs, computational tools to help in lead optimization have lagged, due to the inherently quantum nature of covalent bond formation. We have developed the first QM/MM-based approach to FEP allowing throughput with a cost and timescale suitable for commercial drug discovery. QuValent allows far better predictions than classical methods. A complementary automated platform for assessing transition state energetics similarly provides for warhead optimization.

3:15 Networking Refreshment Break

3:30 Covalent Fragment-Based Ligand Discovery to Drug-Refractory Targets

Joe Patel, PhD, Vice President and Head of Discovery, Nexo Therapeutics

The presentation will discuss the design of CODON, our proprietary pan-amino-acid covalent fragment library and its ability to identify novel and induced pockets on relevant protein targets. The rich SAR generated during the screening phase enables rapid hit-to-lead progression and early confirmation of cellular target engagement.

4:00 Discovery and Characterization of Covalent Inhibitors

Hua Xu, PhD, Director, Head of Chemical Biology and Proteomics, AstraZeneca

Covalent modulation of therapeutic targets is an increasingly important modality for drug discovery, particularly after recent success with historically challenging targets like KRAS G12C. In this talk, I'll present the work we have done to discover covalent inhibitors for two different targets, and also describe our chemical biology efforts to understand the selectivity and mechanism of actions for these inhibitors.

4:30 FEATURED PRESENTATION: Drug Discovery by Developing Heterobifunctional Molecules as Regulated Induced Proximity Targeting Chimeras (RIPTACs)

Jia Zhou, PhD, Professor, Chemical Biology Program, Department of Pharmacology & Toxicology, University of Texas Galveston

RIPTACs show promise in specifically targeting and eliminating disease cells while leaving healthy cells unharmed. As a unique drug discovery approach, RIPTACs work by forming a stable complex with target protein (TP) and effector protein (EP), selectively disrupting the EP function in disease cells and causing cell death. This presentation will introduce the proof of concept of the RIPTAC strategy and our efforts developing such heterobifunctional molecules as potential therapeutics.

5:15 Close of Symposium

5:30 Dinner Short Course Registration

6:00 Dinner Short Course*

SC2: Fragment-Based Drug Design: Advancing Tools and Technologies
*Premium Pricing or separate registration required. See Short Courses page for details.

APRIL 14, 2025 | 1:00-5:15 PM

2nd Annual

Generative AI & Predictive Modeling

Accelerating Drug Discovery by Improving Speed, Scale, and Accuracy

MONDAY, APRIL 14

12:00 pm Pre-Conference Symposium Registration

APPLICATIONS TO INNOVATIONS

1:00 Welcome Remarks

1:10 Chairperson's Remarks
Tudor Oprea, MD, PhD, CEO, Expert Systems, Inc.

1:15 Using Generative AI to Design Small Molecules That Can Engage Multiple Targets
Rayees Rahman, PhD, Co-Founder & CEO, Harmonic Discovery
Unlike conventional methods that focus on single-target selectivity, generative AI models leverage machine learning and deep learning algorithms to explore vast chemical spaces, optimizing molecules for polypharmacology. These models can integrate multi-target profiles, assessing potential off-target effects, efficacy, and safety considerations, ultimately facilitating the creation of compounds with desired therapeutic profiles. This study explores generative modeling for multi-target engagement and highlights its promise to address complex diseases through targeted polypharmacology.

1:45 Impact of Complementary Generative AI Methods and Absolute Binding Free Energy Applied to Drug Discovery
Andrea Bortolato, PhD, Director, Drug Discovery, SandboxAQ
Discover how innovative generative AI and molecular simulation methods are revolutionizing drug discovery. This presentation will explore cutting-edge strategies for hit finding and lead optimization targeting unmet medical needs. Key highlights include AI-based ligand design, active learning absolute free energy perturbation (AQFEP) virtual screening, the Alchemical Transfer Method (ATM) for binding free energy estimation, and IDOLpro—a generative AI solution that integrates deep diffusion with multi-objective optimization.

2:15 Generative AI for Drug Design
Henry van den Bedem, PhD, Senior Vice President, Machine Learning Research & Cheminformatics, Atomwise Inc.

2:45 Sponsored Presentation *(Opportunity Available)*

3:15 Networking Refreshment Break

3:30 Non-Human Intelligence in Drug Discovery
Tudor Oprea, MD, PhD, CEO, Expert Systems, Inc.
This talk summarizes our experience of developing non-human intelligent technologies for drug discovery. We created multiple temporally-validated machine learning (ML) models, and some LLM (large language model) agents to integrate and coordinate drug discovery activities. This platform includes 1) target-phenotype ML models; 2) target-based and property-based ML models; and 3) multiple LLM research assistant agents for drug discovery and repurposing.

4:00 What Got Us Here Won't Get Us There: The Future of Drug Discovery with Generative AI
Sanaz Cordes, MD, Chief Advisor, Healthcare & Life Sciences, World Wide Technology Inc.
This is an engaging and insightful talk on the transformative power of generative AI (GenAI) in drug discovery. It will explore how GenAI is reshaping the drug discovery process, driving efficiency, and unlocking new possibilities for innovation.

4:30 PANEL DISCUSSION: Session Speakers Discuss Current Gaps in Adopting GenAI for Drug Discovery
Moderator: Tudor Oprea, MD, PhD, CEO, Expert Systems, Inc.

5:15 Close of Symposium

5:30 Dinner Short Course Registration

6:00 Dinner Short Course*
SC3: Fundamentals of Generative AI for Drug Discovery

*Premium Pricing or separate registration required. See Short Courses page for details.

Inaugural

Drug Discovery in Women's Health

Where Innovation Meets Impact

MONDAY, APRIL 14

12:00 pm Pre-Conference Symposium Registration

LEVERAGING INNOVATIONS IN RESEARCH & TECHNOLOGIES

1:00 Welcome Remarks

1:10 Chairperson's Remarks

Wendy Young, PhD, Scientific Advisor; Board Director & Former Senior Vice President, Small Molecule Drug Discovery, Genentech

1:15 Where Are All the Drugs in Women's Healthcare?

Wendy Young, PhD, Scientific Advisor; Board Director & Former Senior Vice President, Small Molecule Drug Discovery, Genentech

Despite significant advancements in medicine, women's healthcare remains underserved, particularly in the realm of drug innovation. This talk will share the current landscape of drug approvals for women's health, highlight substantial unmet medical needs, and examine funding trends that impact innovation. Additionally, the extensive opportunities for novel drug discovery programs in this area will be emphasized.

1:45 FEATURED PRESENTATION BY A 2024 TIME WOMAN OF THE YEAR: Fighting Hyperemesis—A Geneticist's Story

Marlena Fejzo, PhD, Assistant Professor, Center for Genetic Epidemiology, Population and Public Health Sciences, Keck School of Medicine, University of Southern California; CSO, Harmonia Healthcare

Hyperemesis gravidarum (HG) is at the severe end of the spectrum of morning sickness and is associated with adverse maternal, fetal, and child outcomes. I dedicated my career to discovering the cause in hopes of improving treatment. We performed genetic studies of HG and identified the emetogenic hormone GDF15 is associated with the condition, elucidating new ways to treat and prevent HG and improve health of mothers, babies, and children.

2:15 Feedback from the Bench and Bedside Leading to the Discovery of Inavolisib (Itovebi), a Potent and Selective PI3K Alpha Inhibitor

Daniel Sutherlin, PhD, Senior Vice President, Small Molecule Drug Discovery, Genentech Inc.

Inavolisib, recently approved by the US FDA for endocrine resistant, PIK3CA mutated, HR-positive, HER2-negative, advanced breast cancer, in combination with palbociclib and fulvestrant, is a potent and selective inhibitor of PI3K alpha, one of the most commonly mutated oncogenes in cancer. The discovery of inavolisb, along with how the molecular properties were shaped by clinical and preclinical data from earlier molecules, will be discussed.

2:45 Sponsored Presentation *(Opportunity Available)*

3:15 Networking Refreshment Break

3:30 NIH Initiatives to Advance Clinical Research on Women's Health

Sarah Temkin, MD, Associate Director for Clinical Research, Office of Research on Women's Health, National Institutes for Health

Since the passage of the NIH Revitalization Act in 1993, the NIH Office of Research on Women's Health (ORWH) has served as the Congressionally mandated focal point for coordinating research on the health of women within the organization. In this presentation, recent NIH efforts related advancing the health of women through research will be reviewed.

4:00 Prioritization of Targets for Non-Hormonal Contraception

Thomas Zollner, MD, Vice President & Lead, Reproductive Health, Bayer AG

Family planning is a human right. Nevertheless, almost half of all pregnancies are unintended and half of them end in abortion. In LMIC, 97% of those are unsafe, leading to 50,000 deaths of young women. User preferences worldwide indicate a preference of innovative, non-hormonal contraceptives. Compounds addressing the sperm proteome in women appear promising based on expected safety & efficacy. Prioritization of drug targets for R&D activities will be discussed.

4:15 Presentation to be Announced

4:30 Tackling New Therapies for PCOS with Machine Learning–Accelerated Medicinal Chemistry

Emily Hanan, Head, Medicinal Chemistry, PostEra

PCOS impacts 1 in 10 women of reproductive age, yet has no specifically approved therapeutics. In this heterogeneous endocrine disorder, androgen excess is linked to reproductive dysfunction and hirsutism. In our pursuit of novel therapies for PCOS, we have successfully applied our machine learning-driven medicinal chemistry platform to rapidly optimize a series of small molecules which affect the testosterone biosynthesis pathway, demonstrating *in vivo* reduction of testosterone with advanced leads.

4:45 Leveraging Multiomics Data to Identify and Prosecute Targets Implicated in Women's Health

Petrina Kamya, PhD, Global Head of AI Platforms & Vice President, Insilico Medicine; President, Insilico Medicine Canada

Endometriosis and alternative sources of non-hormonal contraception are neglected and challenging issues associated with women's health. Today, I will discuss how we leverage multi-omics data and AI to identify novel targets implicated in Endometriosis and how we contribute to the challenge of designing novel non-hormonal contraceptives using AI.

5:00 Leveraging Organoid Models for Drug Discovery in Women's Reproductive Health

Morgan Stanton, PhD, CEO, Opal Therapeutics

Opal Therapeutics is building a biotechnology platform dedicated to drug discovery in women's reproductive health. By integrating patient-derived uterine organoids for chemical screening and advanced AI image analysis, we are pioneering innovative therapeutic approaches for chronic gynecological conditions, including fibroids and endometriosis. Our platform aims to uncover novel pharmaceutical solutions, addressing the urgent need for targeted interventions in women's healthcare.

5:15 Close of Symposium

5:30 Dinner Short Course Registration

6:00 Dinner Short Courses*

*Premium Pricing or separate registration required. See Short Courses page for details.

6th Annual

RNA-Modulating Small Molecule Drugs

Novel Approaches to Target RNA Structure, Binding, Interactions, and Function

MONDAY, APRIL 14

12:00 pm Pre-Conference Symposium Registration

EMERGING CHEMISTRIES & SCREENING TECHNOLOGIES

1:00 Welcome Remarks

1:10 Chairperson's Remarks

Thomas Hermann, PhD, Professor, Department of Chemistry & Biochemistry, University of California, San Diego

1:15 Chemical Proteomic Profiling of RNA-Binding Protein Activity in Cells

Ken Hsu, PhD, Stephen F. and Fay Evans Martin Endowed Associate Professor, Department of Chemistry, The University of Texas at Austin

We developed photo-activatable-competition and chemoproteomic enrichment (PACCE) as global method for identifying RNA-binding sites on proteins. PACCE is complementary to existing RNA interactome capture methods and enables functional profiling of canonical RNA-binding domains as well as discovery of moonlighting RNA binding activity in the human proteome. Here, we provide an update on functional evaluation of non-canonical RBPs discovered using PACCE.

1:45 Visual Biology Drug Discovery

Generoso Ianniciello, Chief Business Officer, Anima Biotech

Lightning.AI, Anima's groundbreaking TechBio platform, uses Visual Biology to transform target and drug discovery. With PathwayLight, it generates deep, large-scale disease biology data by imaging cellular pathways in healthy and diseased cells. This data trains neural networks to identify "disease signatures," uncover novel targets, and discover small molecules that modulate mRNA biology. Validated through partnerships with Lilly, Takeda, and AbbVie, Lightning.AI now powers over 20 drug discovery programs.

2:15 An Integrative Structure-Based Approach to Discovering mRNA-Targeted Small Molecules

Elena Menichelli, PhD, Director & Head, Structural Biology, Arrakis Therapeutics

Using orally bioavailable small molecules to modulate the function of messenger RNAs offers a promising strategy for developing new therapies that extend beyond currently druggable protein targets. Here, we discuss our structure-based approach to discovering mRNA-targeted small molecules, touching on unique challenges in building a broad and robust platform.

2:45 Sponsored Presentation *(Opportunity Available)*

3:15 Networking Refreshment Break

3:30 Enhancing Activation of a Novel Splice Site Sequence: Development of a Small Molecule Splicing Modifier Therapy for Genetic Diseases

Jigar Patel, PhD, Associate Director, Medicinal Chemistry, PTC Therapeutics

The viability of an emerging small molecule splicing program often depends on the ability to drive potency towards a particular target, while maintaining reasonable selectivity. This presentation highlights our hit-to-lead efforts towards the development of a splicing modifier of an undisclosed gene of high interest.

4:00 Recent Advances Developing RNA Splicing Modulators to Treat Incurable Diseases

Diane Hamann, PhD, Principal Scientist, Medicinal Chemistry, Rgenta Therapeutics

Rgenta Therapeutics has developed a proprietary, integrative RNA-targeting oral small molecule discovery platform to deliver first-in-class therapies. We are pursuing targets in the oncology and neurological diseases space, exemplified by the oncogenic transcription factor c-MYB and the PMS1 gene. In this presentation, we'll share an overview of our platform and recent progress on selected targets.

4:30 Identification of Functional Small Molecule Binders of UTRs in mRNAs Relevant to Human Disease

Thomas Roddy, PhD, Senior Vice President, Platform Technology, Atavistik Bio

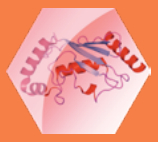
We have developed a technology using LC/MS-based metabolomics and an endogenous metabolite library to systematically discover functional binding pockets on RNA. These pockets enable an efficient drug discovery campaign using AI/ML-enabled structure-based drug design. This process has been successfully executed on several RNA targets in multiple therapeutic areas. Our discovery of compounds that bind to the UTR of human SERPINA1, which is implicated in Alpha-1-Antitrypsin (A1AT) deficiency, will be presented.

5:15 Close of Symposium

5:30 Dinner Short Course Registration

6:00 Dinner Short Courses*

*Premium Pricing or separate registration required. See Short Courses page for details.



8th Annual

Degraders & Molecular Glues — Part 1

Design, Delivery & Optimization of PROTACs and Glue Modalities

6:00 pm MONDAY, APRIL 14: Dinner Short Course*

SC1: Protein Degraders: A Beyond Rule of Five Space and *in vitro* ADME Perspective

*Premium Pricing or separate registration required. See Short Courses page for details.

TUESDAY, APRIL 15

7:00 am Registration Open and Morning Coffee

TARGETED PROTEIN DEGRADATION FOR ONCOLOGY

8:00 Welcome Remarks

8:05 Chairperson's Remarks

Maricel Torrent, PhD, Principal Research Scientist, Computational Drug Discovery, AbbVie, Inc.

8:10 Talk Title to be Announced

Reema Thalji, PhD, Medicinal Chemist, GSK

8:40 Degrading Siglecs for the Treatment of Anti-PD-1 and Anti-CTLA-4 Refractory Tumors

Peng Wu, PhD, Professor, Chemical Physiology, Scripps Research Institute

Siglec-7 and -9 are highly expressed on tumor-infiltrating myeloid cells to suppress their anti-tumor function, but with unclear roles in tumor-infiltrating T cells. We found that these Siglecs suppress T cell activity by inducing TCR dephosphorylation. Using a Siglec-7/9 degrader that targets both Siglecs to the lysosome for degradation, we rescued T cell effector function and reprogrammed tumor microenvironment, resulting in productive tumor control in anti-PD-1 and anti-CTLA-4 refractory mouse tumor models.

9:10 Systematic Discovery of Novel Degraders through Deep Proteomic Screening

NEOsphere BIOTECHNOLOGIES

Henrik Daub, CSO, NEOsphere Biotechnologies GmbH

Rational and systematic strategies are crucial for identifying molecular glue molecules for specific target proteins, essential for successful degrader drug discovery and fully realizing the potential of targeted protein degradation. This presentation will demonstrate how high-throughput proteomics can rapidly establish broad pipelines of novel, high-value degrader targets at scale and within native cells, employing a target and E3 ligase-unbiased approach. Identified targets were subsequently mechanistically validated; for instance, E3 ligase dependency was confirmed, and global ubiquitinomics was used to verify degrader-induced modifications, at an unparalleled depth of 50,000 ubiquitination sites.

9:40 In-Person Breakouts

See Breakouts page on the conference website for details.

10:25 Networking Coffee Break

10:50 Novel MLK3 and LZK Targeting Degraders for the Treatment of TNBC and Head and Neck Cancers

John Brognard, PhD, Senior Investigator, Laboratory of Cellular & Developmental Signaling, National Cancer Institute, National Institutes of Health

The worldwide frequency of head and neck squamous cell carcinoma (HNSCC) is approximately 800,000 new cases, with 430,000 deaths annually. We found that the kinase activity of LZK stabilized c-MYC and that LZK stabilized gain-of-function (GOF) p53 through a kinase-independent mechanism in this cancer. Our lead PROTAC promotes LZK degradation and suppresses expression of GOF p53 and c-MYC, leading to impaired viability in HNSCC and is a promising new therapy.

11:20 PROTAC Degraders of CDK8/CDK19 Mediator Kinases Potently Suppress Multiple Myeloma Proliferation

Campbell McInnes, PhD, Professor, Drug Discovery & Biomedical Sciences, University of South Carolina

CDK8 and CDK19 are kinase components associated with transcriptional Mediator complex. To extend the effects of CDK8/19 inhibition and to suppress kinase-independent activities, we have developed three series of PROteolysis TArgeting Chimeras (PROTACs) based on selective inhibitors of CDK8/19 kinases. CDK8/19 PROTACs were 10-fold more potent in the two CCNC-dependent MM lines (IC50 of 20-30 nM) than kinase inhibitors but not in the independent line.

11:50 Lessons Learned from Developing BTK Molecule Glue Degraders

Jin Wang, PhD, Director, Biochemistry and Molecular Pharmacology, Baylor College of Medicine

In this study, we discovered PS-10, a molecular glue targeting Bruton's tyrosine kinase (BTK). While PS-10 doesn't bind directly to BTK, it binds to E3 ubiquitin ligase CRBN, forming a ternary complex that leads to efficient BTK degradation. Cryo-EM analysis revealed unique protein interactions, and PS-10's mechanism extends to other kinases, demonstrating broader therapeutic potential.

12:20 pm Transition to Lunch

12:25 Luncheon Presentation to be Announced

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12:55 Session Break

OPTIMIZING PROTEIN DEGRADERS & GLUES

1:45 Chairperson's Remarks

Andreas Reichel, PhD, Vice President & Head, DMPK Modelling & Simulations, Bayer Pharma AG

1:50 Novel Approaches to Deliver Bifunctional Degraders

Donglu Zhang, PhD, Senior Fellow, DMPK, Genentech Inc.

Bifunctional degraders have poor physicochemical properties for oral delivery plus show high clearance. This talk will focus on novel approaches to deliver bifunctional degraders to the site of action. These approaches include structural modifications to improve permeability and metabolic stability, conjugation to enable targeted delivery, utilizing selected tissue distribution, elucidating uptake transporters, etc.

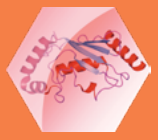
2:20 Mechanistic and Machine Learning Tools for the Development of Orally Bioavailable PROTACs

Dana Klug, PhD, Research Investigator, Medicinal Chemistry, Arvinas Inc.

Proteolysis-targeting chimera (PROTAC) protein degraders are heterobifunctional small molecules that recruit a protein of interest to an E3 ubiquitin ligase, leading to proteasomal degradation of the target protein. This presentation will: 1) provide an overview of PROTAC technology, including properties distinguishing PROTACs from other modalities and 2) discuss physicochemical property guidelines and machine learning models for attaining oral absorption in the beyond Rule of 5 space occupied by PROTACs.

2:50 PK/PD-Model Guided Design of Targeted Protein Degraders and Quantitative Translation of *in vitro* Data to *in vivo* Degradation Profiles

Andreas Reichel, PhD, Vice President & Head, DMPK Modelling & Simulations, Bayer Pharma AG



8th Annual

Degraders & Molecular Glues — Part 1

Design, Delivery & Optimization of PROTACs and Glue Modalities

We present a mechanistic PK/PD modeling framework specifically tailored to Targeted Protein Degraders. Our approach enables a priori predictions to (1) guide compound design & optimization, (2) inform animal study design, and (3) assist in candidate selection. To explore the full potential and requirements we'll draw on experiences with our in-house degrader pipeline. Impact and potential of the fully model-informed degrader development shall inspire the audience for their own work.

3:20 Sponsored Presentation *(Opportunity Available)*

3:35 Grand Opening Refreshment Break in the Exhibit Hall with Poster Viewing and Best of Show Voting Begins

PLENARY KEYNOTE SESSION

4:35 Plenary Welcome Remarks from Lead Content Director

Anjani Shah, PhD, Senior Conference Director, Cambridge Healthtech Institute

4:50 PLENARY KEYNOTE: Applying Diverse Small Molecule Strategies to Difficult Targets: Drugging BTK for (Neuro)Immunology

Christopher J. Helal, PhD, Vice President & Head, Medicinal Chemistry, Biogen

Bruton's Tyrosine Kinase (BTK) plays a central role in certain cancers which has led to the identification and approval of several covalent inhibitors. Despite this progress, challenges exist in identifying BTK inhibitors with improved safety profiles and brain penetration to address both peripheral and central immunological diseases. In this talk we will share application of diverse strategies to inhibit or degrade BTK for optimal efficacy and safety.

5:35 Welcome Reception in the Exhibit Hall with Poster Viewing

6:35 Close of Day

WEDNESDAY, APRIL 16

7:15 am Registration Open and Morning Coffee

DESIGNING MOLECULAR GLUES

8:00 Chairperson's Remarks

Josh Hansen, PhD, Senior Vice President, Chemistry, Treeline Biosciences Inc.

8:05 A Superior Molecular Glue Using Strain Promoted Click for Assembly of Biomolecular Constructs

Robert Liskamp, PhD, Guest Professor & Honorary Senior Research Fellow (University of Glasgow), Biochemistry & Chemistry, University of Maastricht

TMTHSI-molecular glue is a superior molecular click reagent. This reagent combines a great reactivity, with small size and low hydrophobicity, and can be used for a large variety of biomolecular constructs, including ADCs, other peptide or protein constructs containing nucleic acids, dyes, chelators, etc. The recently developed N-terminal-specific attachment to native peptides and proteins greatly expands these possibilities for protein mimics, synthetic vaccines, and attachment to nanoparticles and surfaces.

8:35 Prospective Discovery of Molecular Glues by High-Throughput Chemical Diversification

Michael Erb, PhD, Associate Professor, Department of Chemistry, The Scripps Research Institute

Molecular glues function by binding to a target and reconfiguring its surface to cooperatively engage another target. Motivated by the largely serendipitous nature of molecular glue discovery, we developed a high-throughput chemistry (HTC)-based approach to prospectively discover molecular glues. By systematically installing structural modifications onto a pre-existing ligand of interest, we can discover rare modifications that enable a ligand to function as a molecular glue.

9:05 Rational Molecular Glue Discovery Based on High-Throughput Screening for Novel Ligase-Target Pairs

Abhishek Dogra, Director, Medicinal Chemistry & Induced Proximity, A Alpha Bio Inc.

We describe the application of AlphaSeq, a high-throughput, highly sensitive experimental platform for measuring protein-protein interactions, to elucidate >100 novel interactions between therapeutically relevant targets and diverse set of ligases. We further characterize these PPIs through site-directed mutagenesis to prioritize actionable pairs for rational molecular glue discovery. Finally, we depict the systematic AlphaSeq validation and hit-finding approaches we have employed to identify small molecules that enhance these weak ligase-target interactions.

9:35 Coffee Break in the Exhibit Hall with Poster Awards Announced *(Sponsorship Opportunity Available)*

10:30 Application of Mechanistic Multiparameter Optimization to Predict *in vivo* Pharmacokinetics of Molecular Glues

Lei Jia, PhD, Associate Director, Drug Discovery Data Science, Johnson & Johnson

Mechanistic modeling approaches have advantages to predict *in vivo* properties: they are based on physiological relevance and can support additional scalars such as safety margins and drug-drug interaction risk assessment; they are interpretable to guide molecular design; and are less likely to be influenced by human bias. This work incorporates recent approaches to predict *in vivo* PK properties and dose projection, and also validates *in vitro* to *in vivo* correlation.

11:00 A Molecular Glue Degrader of HuR/ELAVL1 to Treat Debilitating Diseases

Yong Cang, PhD, Professor, ShanghaiTech University; Co-Founder & CSO, Degron Therapeutics

Leveraging induced proximity and degradation proteomics, we discovered a novel CRBN-based molecular glue degrader of HuR/ELAVL1, an RNA binding protein abnormally activated in cancer and other diseases. The MGD is moving to the clinics to treat BRAF mutant cancers as a monotherapy, while its efficacy in other disease models, including cancer cachexia, has been validated. The mechanistic studies of HuR degrader in these diseases are going to be discussed.

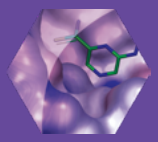
11:30 PANEL DISCUSSION: Session Speakers Share Insights on Discovery and Optimization of Molecular Glues

Moderator: Mary Matyskiela, PhD, Vice President, Molecular Sciences, Neomorph, Inc.

Topics to be discussed:

- Strategies to identify and screen molecular glues
- Value of serendipitous discovery versus rational design
- How to drive structure-activity relationships for molecular glues
- Design and screening of glue libraries in multiple assay formats

12:00 pm Close of Degraders – Part 1 Conference



20th Annual

Fragment-Based Drug Discovery

Towards Small Molecule Therapeutics from Smaller Hits on 'Difficult Targets'

6:00 pm MONDAY, APRIL 14: Dinner Short Course*

SC2: Fragment-Based Drug Design: Advancing Tools and Technologies

*Premium Pricing or separate registration required. See Short Courses page for details.

TUESDAY, APRIL 15

7:00 am Registration Open and Morning Coffee

FRAGMENT-BASED DRUG DISCOVERY (FBDD) BEST PRACTICES & INNOVATIONS

8:00 Welcome Remarks

8:05 Chairperson's Remarks

Daniel A. Erlanson, PhD, Chief Innovation Officer, Innovation and Discovery, Frontier Medicines Corporation

8:10 FEATURED PRESENTATION: From Fragments to Drugs: FBDD Tips for Success

Stephen W. Fesik, PhD, Professor of Biochemistry, Pharmacology & Chemistry; Orrin H. Ingram II Chair in Cancer Research, Vanderbilt University

We've used Fragment-Based Drug Discovery (FBDD) for nearly 30 years and have had success in finding high affinity ligands for some of the most challenging targets. In this presentation, I will reveal the details of the methods, approaches, and best practices that we use in FBDD. Topics include: fragment libraries, screening methods, hit-to-lead fragment optimization, and structure-based design.

9:10 Sponsored Presentation *(Opportunity Available)*

9:40 In-Person Breakouts

See Breakouts page on the conference website for details.

10:25 Networking Coffee Break

10:50 Next-Generation Fragment Screening: Revealing Hidden Insights through Parallel SPR Detection on Large Target Arrays

John Quinn, PhD, Distinguished Scientist, Biophysical Group, Biochemical and Cellular Pharmacology, Genentech

Transformative high-throughput SPR-based fragment screening over large target panels can now be completed in days rather than years, enabling rapid, cost-effective ligandability testing and general pocket finding. Unlike conventional single-target fragment screens, this new approach reveals fragment hit selectivity and allows affinity cluster mapping across many targets. This helps identify selective fragments driven by favorable enthalpic contributions which possess more development potential towards favorable drug-like leads.

11:20 Avidity-Aided Fragment Discovery and Maturation

Thomas Kodadek, PhD, Professor, Department of Chemistry, University of Florida, Scripps Biomedical Research

Protein-binding fragments represent an attractive starting point for drug development. However, due to the weak affinity of these complexes, methods for their discovery are limited. We present here a facile new approach for fragment discovery that leverages avidity effects between bead-displayed fragments and a multimeric target protein to stabilize these complexes and allow large libraries of bead-displayed fragments to be easily screened for binding to a protein of interest.

11:50 The Fragment-Based Discovery of Novel, Reversible, Pan-RAS Inhibitors

John Taylor, PhD, Groip Leader, Medicinal Chemistry, Cancer Research UK Beatson Institute

Herein, we describe the fragment-based discovery process behind a novel series of pan-RAS inhibitors, which bind in the Switch I/II pocket. Through structure-enabled design, we develop these into a series of macrocyclic analogues, which effect inhibition of the RAS/RAF interaction and downstream phosphorylation of ERK.

12:20 pm Transition to Lunch

12:25 Luncheon Presentation *(Sponsorship Opportunity Available)* **or Enjoy Lunch on Your Own**

12:55 Session Break

FBDD-SPURRED PROGRESS

1:45 Chairperson's Remarks

Jennifer D. Venable, PhD, Senior Director, Discovery Chemistry Site Head, Janssen La Jolla

1:50 Discovery of Pyrazolocarboxamide RIP2 Kinase Inhibitors

Mark A. Elban, Scientific Leader, Discovery Chemistry, GSK

A fragment based screening and design program leading to the discovery of pyrazolocarboxamides as novel inhibitors of receptor interacting protein 2 kinase (RIP2). Fragment evolution, robust crystallography, and structure based design were used to afford advanced pyrazolocarboxamides with excellent biochemical and whole blood activity and improved kinase selectivity enabling investigation of RIP2 inhibition as a viable modality for the treatment of in?ammatory indications.

2:20 Identification and Development of Fragment-Derived Chemical Matter in Previously Unknown Allosteric Sites of WRN

Justyna Sikorska, PhD, Associate Principal Scientist, Mass Spectrometry & Biophysics, Merck

Werner Syndrome helicase (WRN) targets mismatch repair deficiency in cancer cells, making it a key target for MSI-H or MMRd tumors. In this presentation, we will describe the identification of a novel allosteric binding pocket using fragment-based screening. Moreover, we will discuss in more detail the chemical progression of one of the fragments hit and underscore the challenges faced in targeting this dynamic helicase.

2:50 Optimization of a Fragment Hit Yields ABBV-973, a Potent, Pan-Allele Small Molecule STING Agonist for Intravenous Administration

Andrew S. Judd, Medicinal Chemist, Abbvie

Optimization of a fragment hit yields ABBV-973, a potent, pan-allele small molecule STING agonist for intravenous administration.

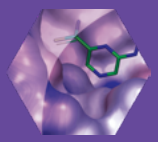
3:20 Sponsored Presentation *(Opportunity Available)*

3:35 Grand Opening Refreshment Break in the Exhibit Hall with Poster Viewing and Best of Show Voting Begins

PLENARY KEYNOTE SESSION

4:35 Plenary Welcome Remarks from Lead Content Director

Anjani Shah, PhD, Senior Conference Director, Cambridge Healthtech Institute



20th Annual

Fragment-Based Drug Discovery

Towards Small Molecule Therapeutics from Smaller Hits on 'Difficult Targets'

4:50 PLENARY KEYNOTE: Applying Diverse Small Molecule Strategies to Difficult Targets: Drugging BTK for (Neuro)Immunology

Christopher J. Helal, PhD, Vice President & Head, Medicinal Chemistry, Biogen

Bruton's Tyrosine Kinase (BTK) plays a central role in certain cancers which has led to the identification and approval of several covalent inhibitors. Despite this progress, challenges exist in identifying BTK inhibitors with improved safety profiles and brain penetration to address both peripheral and central immunological diseases. In this talk we will share application of diverse strategies to inhibit or degrade BTK for optimal efficacy and safety.

5:35 Welcome Reception in the Exhibit Hall with Poster Viewing

6:35 Close of Day

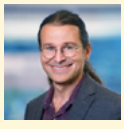
WEDNESDAY, APRIL 16

7:15 am Registration Open and Morning Coffee

COVALENT APPROACHES FOR DRUG DISCOVERY

8:00 Chairperson's Remarks

Chaohong Sun, PhD, Senior Director, Target Enabling Technologies, AbbVie, Inc.



8:05 FEATURED PRESENTATION: Unlocking Difficult-to-Drug Targets with Covalent Fragments

Daniel A. Erlanson, PhD, Chief Innovation Officer, Innovation and Discovery, Frontier Medicines Corporation

Frontier Medicines unites fragment-based and covalent drug discovery to unlock previously intractable targets. This presentation will describe how we apply Frontier's platform to important biological problems including validating a novel E3 ligase and finding leads against other challenging targets.

8:35 Covalent Drug Discovery Strategies to Tackle Challenging Targets

Brent Martin, PhD, Senior Director, Chemical Biology, Odyssey Therapeutics

Recent chemoproteomics advances have enabled covalent ligand discovery across a broad range of new targets. Here, we discuss the expanding role of chemical biology and chemoproteomics to support covalent lead discovery efforts, from early hit-finding to late lead optimization. I will include some case studies against cancer targets.

9:05 Expanding the Chemical Tractability of the Human Proteome

Christopher G. Parker, PhD, Associate Professor, Chemistry, Scripps Research Institute

In this talk, I will describe our lab's efforts to develop powerful photoaffinity-based chemical proteomic strategies to broadly map ligandable sites on proteins directly in cells, and how this information can be advanced into useful chemical probes for targets that play critical roles in human health and disease.

9:35 Coffee Break in the Exhibit Hall with Poster Awards Announced

(Sponsorship Opportunity Available)

10:30 Photo-Affinity Probes for Drug Discovery

Jarrett R. Remsberg, PhD, Senior Scientist I, Platform and Proteomics, Belharra Therapeutics

Belharra Therapeutics applies a novel chemistry-enabled non-covalent probe library and quantitative mass spectrometry to identify chemical probes that selectively bind any pocket, on any protein, in live cells. This next-gen chemoproteomics discovery engine identifies chemical probes that selectively engage diverse protein classes including transcription factors, adaptors, ion channels, and transporters, dramatically increasing the scope of the druggable proteome.

11:00 Histidine and Tyrosine Targeting for Covalent Fragment Discovery

Maurizio Pellecchia, PhD, Professor, Biomedical Sciences Division, University of California, Riverside

The design of covalent drugs targeting residues other than Cys, such as His, or Tyr, is gaining significant traction. I will discuss strategies and opportunities to design covalent ligands targeting those residues using both ligand-first structure-based design or covalent-fragment screening. I will present our successful implementations of both approaches.

11:30 Proteomic and Direct-to-Biology-Based Covalent-Fragment Discovery

Jin Wang, PhD, Director, Biochemistry and Molecular Pharmacology, Baylor College of Medicine

We introduce COOKIE-Pro (COvalent Occupancy KInetic Enrichment via Proteomics), a novel method for quantifying covalent inhibitor binding kinetics proteome-wide. The method accurately determines kinact and KI values using a desthiobiotin probe and mass spectrometry. By integrating direct-to-biology synthesis with COOKIE-Pro, we enabled rapid screening of covalent fragments without purification, generating high-confidence hits within days. This approach overcomes limitations of traditional methods and accelerates development of selective covalent therapeutics.

12:00 pm Close of Fragment Conference

7th Annual

AI/ML for Early Drug Discovery — Part 1

AI-Driven Drug Design and Lead Optimization for Small Molecule and Peptide Therapeutics

6:00 pm MONDAY, APRIL 14: Dinner Short Course*

SC3: Fundamentals of Generative AI for Drug Discovery

*Premium Pricing or separate registration required. See Short Courses page for details.

TUESDAY, APRIL 15

7:00 am Registration Open and Morning Coffee

ACCELERATING DRUG DISCOVERY USING AI/ML

8:00 Welcome Remarks

8:05 Chairperson's Remarks

Wendy Young, PhD, Scientific Advisor; Board Director & Former Senior Vice President, Small Molecule Drug Discovery, Genentech

8:10 FEATURED PRESENTATION: A Quantum Leap from Physics to AI- 15 years of Transforming Drug Discovery

Jose Duca, PhD, Global Head Computer Aided Drug Discovery, Global Discovery Chemistry, Novartis Institutes for Biomedical Research Inc.

We will explore the transformative journey of drug discovery over the past 15 years, driven by advancements in AI, quantum mechanics, and physics-based methods. We will highlight the importance of creating a dry lab (Computer-Aided Drug Discovery, CADD group) grounded in physics and first principles, showcasing innovative techniques that have revolutionized drug design. Additionally, we will demonstrate how a relentless focus on delivering the portfolio has led to groundbreaking discoveries.

9:10 Presentation to be Announced

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9:40 In-Person Breakouts

See Breakouts page on the conference website for details.

10:25 Networking Coffee Break

10:50 Leveraging Organoid Models and AI for Drug Discovery in Women's Reproductive Health

Morgan Stanton, PhD, CEO, Opal Therapeutics

Opal Therapeutics is building a biotechnology platform dedicated to drug discovery in women's reproductive health. By integrating patient-derived uterine organoids for chemical screening and advanced AI image analysis, we are pioneering innovative therapeutic approaches for chronic gynecological conditions, including fibroids and endometriosis. Our platform aims to uncover novel pharmaceutical solutions, addressing the urgent need for targeted interventions in women's healthcare.

11:20 Leveraging Multiomics Data to Identify and Prosecute Targets Implicated in Women's Health

Petrina Kamya, PhD, Global Head of AI Platforms & Vice President, Insilico Medicine; President, Insilico Medicine Canada

Endometriosis and alternative sources of non-hormonal contraception are neglected and challenging issues associated with women's health. Today, I will discuss how we leverage multiomics data and AI to identify novel targets implicated in Endometriosis and how we contribute to the challenge of designing novel non-hormonal contraceptives using AI.

11:50 Tackling New Therapies for PCOS with Machine Learning–Accelerated Medicinal Chemistry

Emily Hanan, Head, Medicinal Chemistry, PostEra

PCOS impacts 1 in 10 women of reproductive age, yet has no specifically-approved therapeutics. In this heterogeneous endocrine disorder, androgen excess is linked to reproductive dysfunction and hirsutism. In our pursuit of novel therapies for PCOS, we have successfully applied our machine learning–driven medicinal chemistry platform to rapidly optimize a series of small molecules which affect the testosterone biosynthesis pathway, demonstrating *in vivo* reduction of testosterone with advanced leads.

12:20 pm Transition to Lunch

12:25 Luncheon Presentation to be Announced

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12:55 Session Break

SMALL MOLECULE DRUG DESIGN USING AI/ML

1:45 Chairperson's Remarks

Jose Duca, PhD, Global Head Computer Aided Drug Discovery, Global Discovery Chemistry, Novartis Institutes for Biomedical Research Inc.

1:50 AI/ML-Based Discovery of Novel 5-HT2A Receptor Agonists with Non-Hallucinogenic Potential

Tanweer A. Khan, PhD, Senior Director & Head, Discovery Chemistry, ATAI Life Sciences

We identified non-hallucinogenic 5-HT2AR agonists with antidepressant-like activity through AI-driven drug design. These molecules showed strong *in vitro* 5-HT2AR activation, high brain penetration in rodents, and antidepressant-like effects in behavioral and EEG tests without hallucinogenic responses.

2:20 Using AI for mRNA-Targeted Small Molecule Drug Discovery: Tips, Tricks, and Pitfalls

Ella Morishita, PhD, Senior Investigator, Basic Research, Veritas In Silico Inc.

Discovering mRNA-targeted small molecule drugs presents challenges in identifying optimal targets and developing potent, specific modulators. This presentation will explore how advanced experimental tools and computational techniques, including AI, integrated within our ibVIS platform can enhance target identification, screening, hit-to-lead, and lead optimization. New data and effective strategies will be shared to advance drug discovery programs while avoiding potential pitfalls.

2:50 AI-Powered Hit Finding and Beyond

Dmitri Kireev, PhD, Professor, Department of Chemistry, University of Missouri

Lead discovery is shifting toward hard-to-drug targets, while fast-growing chemical spaces offer new hit-finding opportunities. Yet, technologies for exploiting vast spaces to identify leads against challenging targets are yet to emerge. We present our effort on addressing these challenges by enhancing our FRASE-bot platform to include 3D pharmacophore searches on multi-billion datasets, ABFE simulations, and new strategies for extracting from phenotypic data, with a focus on lead identification and optimization.

3:20 Drug Activity Evaluation: Data, Physical Methods and Pre-trained Models

DP Technology

Hang Zheng, Senior Researcher, Atombeat

Efficient lead optimization combines physics-based precision with AI-driven scalability. Our system integrates FEP with on-the-fly DPA-2 force field refinement for accurate affinity predictions and uses an AI Agent to extract compound-activity data from patents, expanding datasets. Leveraging the Uni-Mol pre-trained model, AutoML, and contrastive learning, we enhance QSAR modeling. These advances form a robust drug activity evaluation system, accelerating lead optimization.

3:35 Grand Opening Refreshment Break in the Exhibit Hall with Poster Viewing and Best of Show Voting Begins

7th Annual

AI/ML for Early Drug Discovery — Part 1

AI-Driven Drug Design and Lead Optimization for Small Molecule and Peptide Therapeutics

PLENARY KEYNOTE SESSION

4:35 Plenary Welcome Remarks from Lead Content Director
Anjani Shah, PhD, Senior Conference Director, Cambridge Healthtech Institute

4:50 PLENARY KEYNOTE: Applying Diverse Small Molecule Strategies to Difficult Targets: Drugging BTK for (Neuro)Immunology
Christopher J. Helal, PhD, Vice President & Head, Medicinal Chemistry, Biogen

Bruton's Tyrosine Kinase (BTK) plays a central role in certain cancers which has led to the identification and approval of several covalent inhibitors. Despite this progress, challenges exist in identifying BTK inhibitors with improved safety profiles and brain penetration to address both peripheral and central immunological diseases. In this talk we will share application of diverse strategies to inhibit or degrade BTK for optimal efficacy and safety.

5:35 Welcome Reception in the Exhibit Hall with Poster Viewing

6:35 Close of Day

WEDNESDAY, APRIL 16

7:15 am Registration Open and Morning Coffee

DIVERSIFYING AI/ML APPLICATIONS

8:00 Chairperson's Remarks
Fred Manby, DPhil, Co-Founder & CTO, Iambic Therapeutics

8:05 Creating and Using Enchant, the Multi-Modal Transformer for Drug Discovery
Fred Manby, DPhil, Co-Founder & CTO, Iambic Therapeutics

Many companies have worked on laboratory automation to generate large volumes of high-quality data. At Iambic we have built Enchant—a multimodal transformer trained on dozens of modalities and data sources. It can be deployed on a huge range of highly relevant issues in drug discovery. Here we'll discuss what it took to create Enchant, and how we leverage this and other AI technologies in our drug discovery pipeline.

8:35 PANEL DISCUSSION: How Drug Discovery Applications Drive AI Innovations and Vice Versa
Moderator: Fred Manby, DPhil, Co-Founder & CTO, Iambic Therapeutics
Panelists:
Bryce Allen, PhD, Co-Founder & CEO, Differentiated Therapeutics
Jose Duca, PhD, Global Head Computer Aided Drug Discovery, Global Discovery Chemistry, Novartis Institutes for Biomedical Research Inc.
Aaron Friedman, PhD, Principal Product Manager, Amazon Omics, Amazon Web Services (AWS)
Ashwini Ghogare, PhD, Executive Director and Head of AI & Automation for Drug Discovery, MilliporeSigma
Petrina Kamya, PhD, Global Head of AI Platforms & Vice President, Insilico Medicine; President, Insilico Medicine Canada

9:35 Coffee Break in the Exhibit Hall with Poster Awards Announced
(Sponsorship Opportunity Available)

10:30 Talk Title to be Announced
Mridula Bontha, Scientist I, Cheminformatics & Machine Learning, Nurix Therapeutics

11:00 Applications of Machine Learning in Target-Based Drug Discovery
Sean Ekins, PhD, Founder & CEO, Collaborations Pharmaceuticals, Inc.

Collaborations Pharmaceuticals, Inc. is a small drug discovery company that has developed its own suite of machine learning tools. These technologies have been applied to various drug discovery (Glycogen Synthase Kinase 3 beta as well as Chemokine receptors CCR3, CCR4, and CCR5) and toxicology targets (steroidogenesis, seizure inducers) to build and validate models prior to screening drug or compound libraries and eventual *in vitro* testing with implications for human health.

11:30 Talk Title to be Announced
Peter C Ray, PhD, Executive Director, Drug Design, Exscientia Ltd.

12:00 pm Close of AI/Machine Learning – Part 1 Conference

13th Annual

GLP1 & Oral Peptides

Obesity-Related Drug Discovery Advances

TUESDAY, APRIL 15

7:00 am Registration Open and Morning Coffee

GLP1, GIP1 PEPTIDE-BASED DRUG DESIGN & DEVELOPMENT

8:00 Welcome Remarks

8:05 Chairperson's Remarks
Hao Wu, PhD, Scientist 4, Genentech Inc.

8:10 Biased Agonism at GLP-1R and GIPR for Treating T2D and Obesity
Ruben Rodriguez, PhD, Senior Scientist, In Vitro Pharmacolgy, Carmot/Roche
Obesity and diabetes are major public health concerns. Incretin-like therapeutics have proven highly effective in treating both conditions and their associated complications. We are exploring the next generation of higher efficacy compounds through biased signaling of cAMP over ß-arrestin on both GLP-1R and GIPR. Our findings demonstrate that biased agonists provide longer-lasting glucose reduction, greater food intake suppression, and weight loss, highlighting their potential in treating these conditions.

8:40 Tuning Multi-Receptor Peptide Agonists through Molecular Design
Krishna Kumar, PhD, Professor, Chemistry, Tufts University
We describe here the design and development of potent peptide analogs that are completely refractory to hydrolytic enzyme action while retaining full biological activity, potency, and efficacy. This lecture will describe the fundamental design principles, molecular pharmacology, and *in vivo* data detailing, fine tuning such activity by simple chemical modification of peptides. Some of the compounds described rival or better those used in the clinic.

9:10 Presentation to be Announced

9:40 In-Person Breakouts
See Breakouts page on the conference website for details.

10:25 Networking Coffee Break

10:50 Novel Unimolecular Tetra-Agonists for the Treatment of Obesity and Related Disorders
Cristina M. Rondinone, PhD, Founder & CEO, Pep2Tango Therapeutics
We describe the characterization of a novel long-acting peptide agonist for GLP-1, GIP, Amylin, and Calcitonin Receptors, and assessed its efficacy against the dual GIPR/GLP-1R agonist Tirzepatide. Multiple metabolic endpoints were examined, including acute food intake and calcium regulation effects in lean rats, acute glucose-lowering effects in lean mice, and its chronic effects in diet-induced obesity (DIO) rats compared to Tirzepatide.

11:20 Talk Title to be Announced
Scott Pollack, PhD, Research Fellow, Peptide Therapeutics, Merck & Co., Inc.

11:50 Presentation to be Announced

12:20 pm Transition to Lunch

12:25 Luncheon Presentation *(Sponsorship Opportunity Available)* **or Enjoy Lunch on Your Own**

12:55 Session Break

SMALL MOLECULE & OTHER ANTI-OBESITY APPROACHES

1:45 Chairperson's Remarks
Robert D. Mazzola, PhD, Director & Principal Scientist, Chemical Research, Merck & Co.

1:50 Developing Small Molecule Agonists of GLP-1R and Other Obesity-Related Peptide-Binding GPCRs
Yingli Y. Ma, PhD, CTO, Platform Technology, Structure Therapeutics Shanghai Basecamp Biotechnology Co.
I will present on the development of small molecule agonist versions of peptides that bind G protein-coupled receptors (GPCRs) such as GLP-1R that play a role in obesity

2:20 Discovery and Development of Orally Available GLP1 Receptor Small Molecule Agonist and Sensitizer
Jiayu Liao, PhD, Professor, Bioengineering, University of California, Riverside
Small molecule modulators for the GLP1 receptor offer complementary chemical tools and therapeutic agents as a novel mode of action. We pioneered the discovery and development of a non-peptide and orally available small molecule GLP1 receptor agonist and an utterly novel action of the GLP1 peptide sensitizer. This represents a novel opportunity for the GLP1 receptor and Class B GPCRs as therapeutics to treat metabolic diseases in the future.

2:50 The Promise of Synergistic Pharmacology: LY3457263, a Novel NPY2 Receptor Agonist for Type 2 Diabetes and Obesity
Avinash Muppidi, PhD, Director, Peptide Therapeutics, Eli Lilly & Co.

3:20 Sponsored Presentation *(Opportunity Available)*

3:35 Grand Opening Refreshment Break in the Exhibit Hall with Poster Viewing and Best of Show Voting Begins

PLENARY KEYNOTE SESSION

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Anjani Shah, PhD, Senior Conference Director, Cambridge Healthtech Institute

4:50 PLENARY KEYNOTE: Applying Diverse Small Molecule Strategies to Difficult Targets: Drugging BTK for (Neuro)Immunology
Christopher J. Helal, PhD, Vice President & Head, Medicinal Chemistry, Biogen
Bruton's Tyrosine Kinase (BTK) plays a central role in certain cancers which has led to the identification and approval of several covalent inhibitors. Despite this progress, challenges exist in identifying BTK inhibitors with improved safety profiles and brain penetration to address both peripheral and central immunological diseases. In this talk we will share application of diverse strategies to inhibit or degrade BTK for optimal efficacy and safety.

5:35 Welcome Reception in the Exhibit Hall with Poster Viewing

6:35 Close of Day

WEDNESDAY, APRIL 16

7:15 am Registration Open and Morning Coffee

MAKING ORAL PEPTIDES

8:00 Chairperson's Remarks
Anastasia Velentza, PhD, Vice President, Biology, Vilya Therapeutics

8:05 Development of Orally Available Cyclic Peptides
Manuel L Merz, PhD, Postdoctoral Fellow, Broad Institute
I present work completed in the Christian Heinis laboratory as part of my graduate studies where we developed synthesis and screening tools for generating large chemical libraries of small cyclic peptides, enabling the discovery of target-specific, orally bioavailable peptides. This generalizable workflow, applicable to interactions with a functional readout, yielded sub-1 kDa peptides with high-affinity binding to proteases and good oral bioavailability in rats.

8:35 *De novo* Design of Oral Peptides Using Physics-Based Generative AI
Hans Melo, PhD, Co Founder & CEO, Menten AI
Cyclic peptides have long been considered attractive as a drug modality due to their medium size and combining the advantages of small molecules and biologics. However, membrane permeability remains a significant challenge. Recently, physics-based Generative AI has emerged as a promising technology to design cyclic peptides with specific properties in mind. Here we focus on applying this method to design *de novo* cyclic peptides with drug-like oral bioavailability.

9:05 PANEL DISCUSSION: GLP1-Related Drug Discovery & Development Challenges
Moderator: Emel Adaligil, PhD, Principal Scientific Manager, Peptide Therapeutics, Genentech, Inc.

9:35 Coffee Break in the Exhibit Hall with Poster Awards Announced
(Sponsorship Opportunity Available)

10:30 Formulation & Delivery Considerations in Early Drug Discovery for Oral Peptides
Tahnee J. Dening, PhD, Principal Scientist, Genentech Inc.
Although once considered highly infeasible, oral administration of peptide drugs is now a reality, as evidenced by oral semaglutide (Rybelsus) and oral octreotide (Mycapssa) drug products. In this presentation, we will discuss formulation strategies (and peptide design rules) to enable the oral absorption of both high solubility/low permeability peptides and low solubility/high permeability peptides, with an emphasis on early drug discovery.

11:00 Advancements in Peptide Late-Stage Functionalization for Drug Discovery
Jennifer Hanisak, PhD, Senior Scientist, Peptide Chemistry, Merck

11:30 Next-Generation, Orally Bioavailable, PD-L1-Targeted Macrocyclic Peptide
Paul M. Scola, PhD, Senior Director, Drug Discovery, Bristol Myers Squibb Co.

12:00 pm Close of GLP1 & Oral Peptides Conference

Inaugural

Emerging Technologies for Discovery Chemistry

Covalent Approaches and New Biophysical Tools

6:00 pm MONDAY, APRIL 14: Dinner Short Course*

SC4: Detecting Target Engagement: Technology Innovations

*Premium Pricing or separate registration required. See Short Courses page for details.

TUESDAY, APRIL 15

7:00 am Registration Open and Morning Coffee

BIOPHYSICAL METHODS FOR LEAD GENERATION

8:00 Welcome Remarks

8:05 Chairperson's Remarks

Sujatha Gopalakrishnan, Director, Research Fellow, Head of HTS & Molecular Characterization, AbbVie

8:10 Affinity Selection-Mass Spectrometry (ASMS) for Drug Lead Generation

Hans-Peter N. Biemann, PhD, Distinguished Scientist, Integrated Drug Discovery, Sanofi

Affinity Selection-Mass Spectrometry (ASMS) identifies small molecule ligands for soluble and membrane proteins via a mass-encoded readout. Additionally, this binding assay approach enables compound competition binding assessments and binding site mapping with membrane proteins without purifying the target. This presentation reviews several applications across diverse ASMS platforms at distinct service labs, including studies with poorly ligandable proteins.

8:40 Implementation of an IR-MALDESI-Based ASMS Platform: Learnings from Screening and Affinity Ranking Applications

Nathaniel L. Elsen, PhD, Principal Research Scientist, Discovery, AbbVie, Inc.

Affinity Selection Mass Spectrometry (ASMS) has been implemented at AbbVie for screening, hit confirmation, and direct-to-biology applications. Learnings based on our particular ASMS method will be discussed and best use cases will be presented.

9:10 Presentation to be Announced

药明康德 WuXi AppTec

9:40 In-Person Breakouts

See Breakouts page on the conference website for details.

10:25 Networking Coffee Break

10:50 Discovering Functional Cryptic Allosteric Binding Pockets via a Novel Mass Spectrometry–Based Platform to Screen Cellular Metabolite and Fragment Libraries

Thomas Roddy, PhD, Senior Vice President, Platform Technology, Atavistik Bio

Cellular metabolites control many biological processes through direct interactions with proteins, including allosterically regulating many classes of proteins. We have developed technology using LC/MS-based metabolomics and an endogenous metabolite library to systematically discover functional allosteric pockets. These pockets enable an efficient drug discovery campaign using AI/ML-enabled structure-based drug design. This has been successfully accomplished several times, including for our oncology development candidate, which will be presented.

11:20 Large-Scale Screening of Drug Candidates from Multiple Modalities Using Biophysical Technologies in Early-Stage Drug Discovery

Arusha Acharyya, PhD, Senior Scientist, Mass Spectrometry & Biophysics, Merck & Co. Inc.

A diverse array of biophysical technologies has been pivotal in early-stage drug discovery, particularly the use of assays such as SPR, Fluorescence Spectroscopy, and AS/MS to assess molecular interactions, binding affinities, kinetics, and potential mechanisms of action for identifying potential drug candidates across different modalities. This presentation will highlight the effort to develop and optimize large-scale biophysical assays and industrial workflows to expedite hit validation and accelerate rational drug development.

11:50 Technology Spotlight(s)

12:20 pm Transition to Lunch

12:25 Luncheon Presentation *(Sponsorship Opportunity Available)* **or Enjoy Lunch on Your Own**

12:55 Session Break

CRYO-EM & SPR FOR COMPLEX MEMBRANE PROTEINS

1:45 Chairperson's Remarks

Thomas P. Garner, PhD, Principal Scientist, Biophysics, Genentech, Inc.

1:50 Using CryoEM to Capture Multiple Activation States of an Orphan GPCR

Claire Metrick, PhD, Senior Scientist, Structural Biology, Biogen

Class A GPCRs are small receptors that often lack an extracellular domain. GPCRs mediate physiological functions through ligand binding, and in orphan GPCRs these ligands are unidentified. GPCRs are attractive targets for indications from brain injury to obesity, but structural study has been hindered by their innate qualities. Here we present and compare novel structures of a class A orphan GPCR with bound ligand to inform mechanism and drug discovery.

2:20 Enabling High Throughput Electron Cryo-Microscopy for Structure-Based Design

Judith Reeks, PhD, Scientist, Structural Biology, Astex Pharmaceuticals

Access to high resolution structural data on protein-ligand complexes is a prerequisite for structure-based drug design. For proteins refractory to X-ray crystallography, high throughput structure determination by cryo-EM has the potential to be transformational for medicinal chemistry. This talk will describe a workflow, from protein production through to high resolution structural data, applied to a biologically important ion channel target in complex with a chemically diverse range of ligands.

2:50 SPR-Microscopy for Detecting GPCR Target Engagement

Kris A. Borzilleri, Principal Scientist, Structural Biology & Molecular Sciences, Pfizer Global R&D, Groton Labs

Measuring direct binding and kinetics to membrane proteins has long been a challenge due to poor behavior of these targets when purified out of their native environments. Surface Plasmon Resonance Microscopy (SPRm), which combines optical microscopy with label-free SPR, allows for detection of binding in the whole cell environment. Using SPRm, we measured binding affinities on several targets that are in excellent agreement with radioligand binding and functional IC50 assays.

3:20 How Assessment of Cellular Target Engagement Accelerates Drug Discovery

PELAGO BIOSCIENCE

Helena Almqvist, Senior Project Advisor, Pelago Bioscience

Inaugural

Emerging Technologies for Discovery Chemistry

Covalent Approaches and New Biophysical Tools

Applications of CETSA in drug discovery:
• Primary screening with CETSA to tackle challenging targets without the need to modify the cell line, target, or the compound.

• Rapid and reliable hit confirmation enables certainty and early confidence in prioritization between your compounds or series.

• Unbiased selectivity profiling to identify liabilities earlier and select candidates with relevant biological efficacy.

3:35 Grand Opening Refreshment Break in the Exhibit Hall with Poster Viewing and Best of Show Voting Begins

PLENARY KEYNOTE SESSION

4:35 Plenary Welcome Remarks from Lead Content Director
Anjani Shah, PhD, Senior Conference Director, Cambridge Healthtech Institute

4:50 PLENARY KEYNOTE: Applying Diverse Small Molecule Strategies to Difficult Targets: Drugging BTK for (Neuro)Immunology
Christopher J. Helal, PhD, Vice President & Head, Medicinal Chemistry, Biogen
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5:35 Welcome Reception in the Exhibit Hall with Poster Viewing

6:35 Close of Day

WEDNESDAY, APRIL 16

7:15 am Registration Open and Morning Coffee

COVALENT APPROACHES FOR DRUG DISCOVERY

8:00 Chairperson's Remarks
Chaohong Sun, PhD, Senior Director, Target Enabling Technologies, AbbVie, Inc.

8:05 FEATURED PRESENTATION: Unlocking Difficult-to-Drug Targets with Covalent Fragments
Daniel A. Erlanson, PhD, Chief Innovation Officer, Innovation and Discovery, Frontier Medicines Corporation
Frontier Medicines unites fragment-based and covalent drug discovery to unlock previously intractable targets. This presentation will describe how we apply Frontier's platform to important biological problems including validating a novel E3 ligase and finding leads against other challenging targets.

8:35 Covalent Drug Discovery Strategies to Tackle Challenging Targets
Brent Martin, PhD, Senior Director, Chemical Biology, Odyssey Therapeutics
Recent chemoproteomics advances have enabled covalent ligand discovery across a broad range of new targets. Here, we discuss the expanding role of chemical biology and chemoproteomics to support covalent lead discovery efforts, from early hit-finding to late lead optimization. I will include some case studies against cancer targets.

9:05 Expanding the Chemical Tractability of the Human Proteome
Christopher G. Parker, PhD, Associate Professor, Chemistry, Scripps Research Institute
In this talk, I will describe our lab's efforts to develop powerful photoaffinity-based chemical proteomic strategies to broadly map ligandable sites on proteins directly in cells, and how this information can be advanced into useful chemical probes for targets that play critical roles in human health and disease.

9:35 Coffee Break in the Exhibit Hall with Poster Awards Announced
(Sponsorship Opportunity Available)

10:30 Photo-Affinity Probes for Drug Discovery
Jarrett R. Remsberg, PhD, Senior Scientist I, Platform and Proteomics, Belharra Therapeutics
Belharra Therapeutics applies a novel chemistry-enabled non-covalent probe library and quantitative mass spectrometry to identify chemical probes that selectively bind any pocket, on any protein, in live cells. This next-gen chemoproteomics discovery engine identifies chemical probes that selectively engage diverse protein classes including transcription factors, adaptors, ion channels, and transporters, dramatically increasing the scope of the druggable proteome.

11:00 Histidine and Tyrosine Targeting for Covalent Fragment Discovery
Maurizio Pellecchia, PhD, Professor, Biomedical Sciences Division, University of California, Riverside
The design of covalent drugs targeting residues other than Cys, such as His, or Tyr, is gaining significant traction. I will discuss strategies and opportunities to design covalent ligands targeting those residues using both ligand-first structure-based design or covalent-fragment screening. I will present our successful implementations of both approaches.

11:30 Proteomic and Direct-to-Biology-Based Covalent-Fragment Discovery
Jin Wang, PhD, Director, Biochemistry and Molecular Pharmacology, Baylor College of Medicine
We introduce COOKIE-Pro (COvalent Occupancy KInetic Enrichment via Proteomics), a novel method for quantifying covalent inhibitor binding kinetics proteome-wide. The method accurately determines kinact and KI values using a desthiobiotin probe and mass spectrometry. By integrating direct-to-biology synthesis with COOKIE-Pro, we enabled rapid screening of covalent fragments without purification, generating high-confidence hits within days. This approach overcomes limitations of traditional methods and accelerates development of selective covalent therapeutics.

12:00 pm Close of Emerging Technologies Conference

TUESDAY, APRIL 15, 2025, 8:00 AM-3:35 PM | WEDNESDAY, APRIL 16, 2025, 8:00 AM-12:00 PM

The Medicinal Chemistry-Pharmacology Interface: The 3 Independent SARs for New Drug Candidates

Training seminar takes place in-person only

Instructor:

Terrence P. Kenakin, PhD, Professor, Pharmacology, University of North Carolina at Chapel Hill

This training seminar will cover the three independent structure-activity-relationships (SARs) that must be satisfied for new drug success: (1) Primary Target Activity, (2) Pharmacokinetic Profile, and (3) Safety.

Day 1 (AM): SAR 1: Primary Target Activity

- Affinity: What concentrations are needed in the receptor compartment for target binding?
- Efficacy: How do drugs produce cellular response (drugs have many efficacies)? How the combination of signaling effects yields a 'quality' of efficacy to cells.

Day 1 (PM): SAR 1: Primary Target Activity (cont.)

- Efficacy/how biased-signaling causes complex patterns of efficacy (and how can this be manipulated?)
- Allosteric vs. orthosteric interaction of molecules: how allosteric interaction fundamentally differs from orthosteric (same site) interaction
- Kinetics of ligand interaction for *in vivo* target coverage: the importance of *in vivo*-restricted diffusion/ importance of receptor offset rates for target coverage (PK-PD dissociation)/methods to measure kinetics

Day 2 (AM): SAR 2-Pharmacokinetic Profile and SAR 3—Safety

- SAR 2 (ADME): Methods for modification of candidate ADME properties (modification of 'druglike' activity/specific modification of interactions with recognition processes (i.e., hepatic enzymes, transporters)
- SAR 3: Safety: Basic safety issues faced early on (cytotoxicity, hepatotoxicity, hERG, Ames test)/ translation of *in vitro* to *in vivo* activity

Beginning his career as a synthetic chemist, Terry Kenakin received a PhD in Pharmacology at the University of Alberta in Canada. After a postdoctoral fellowship at University College London, UK, he joined Burroughs-Wellcome as an associate scientist for 7 years. From there, he continued working in drug discovery for 25 years first at Glaxo, Inc., then Glaxo Wellcome, and finally as a Director at GlaxoSmithKline Research and Development laboratories at Research Triangle Park, North Carolina, USA. Dr. Kenakin is now a professor in the Department of Pharmacology, University of North Carolina School of Medicine, Chapel Hill. Currently he is engaged in studies aimed at the optimal design of drug activity assays systems, the discovery and testing of allosteric molecules for therapeutic application, and the quantitative modeling of drug effects. In addition, he is Director of the Pharmacology graduate courses at the UNC School of Medicine. He is a member of numerous editorial boards, as well as Editor-in-Chief of the *Journal of Receptors and Signal Transduction.* He has authored numerous articles and has written 10 books on pharmacology.

WEDNESDAY, APRIL 16, 2025, 1:30-5:45 PM | THURSDAY, APRIL 17, 2025, 10:15 AM-5:40 PM

Drug Exposure at the Target: The Role of ADME and Pharmacokinetics

Training seminar takes place in-person only

Instructor:

Erland Stevens, PhD, James G. Martin Professor, Department of Chemistry, Davidson College

This training seminar describes how pharmacokinetics (PK) affects drug exposure at the intended target. It opens with a foundation of clinical PK including the determination of key PK parameters from Cp-time data. It also covers common preclinical ADME assays that allow estimation of a compound's human PK properties. The materials bridge the idea of a compound's PK and its observed pharmacodynamic effects (PD) through coverage of PK/PD modeling.

Session 1

- Drug discovery—typical order of operations
- ADME and key pharmacokinetic parameters
- Modeling Cp-time curves from an IV dose
- Modeling Cp-time curves from an oral dose

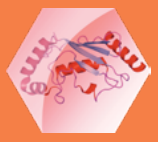
Session 2

- Oral drug space and membrane permeability
- Metabolic stability and intrinsic clearance
- Plasma, PPB, and the free drug hypothesis
- Compartment models

Session 3

- Pre-formulation and formulation
- Preclinical species and PBPK
- Non-small molecule drug modalities PK/PD modeling

Erland Stevens is formally trained as a synthetic organic chemist, with a PhD from the Department of Chemistry at the University of Michigan at Ann Arbor. He specialized in nitrogen heterocycle synthetic methodology. After completing his postdoctoral research at The Scripps Research Institute in La Jolla, CA, he joined the chemistry faculty at Davidson College in Davidson, NC. In addition to teaching organic chemistry, he created an undergraduate medicinal chemistry course and later published a textbook, *Medicinal Chemistry: The Modern Drug Discovery Process*, with Pearson Education. He then created an online medicinal chemistry course, which has been continuously revised and publicly available for approximately 10 years. He subsequently worked with Novartis to create additional online materials that are used with employees for continuing education purposes. He maintains an interest in the computational prediction of pharmacokinetic parameters based on structural features of drug-like structures.



8th Annual

Degraders & Molecular Glues — Part 2

Pursuing Diverse Targets, Exploring New Ligases and Degradation Pathways

APRIL 16-17, 2025

WEDNESDAY, APRIL 16

12:00 pm Registration Open

EXPLORING NEW LIGASES

1:30 Welcome Remarks

1:35 Chairperson's Remarks

Jin Wang, PhD, Director, Biochemistry and Molecular Pharmacology, Baylor College of Medicine

1:40 Identification of Disulfide Constrained Peptide-Based Binders against Membrane Bound E3 Ubiquitin Ligases

Xinxin Gao, PhD, Principal Scientific Manager, Peptide Therapeutics, Genentech, Inc.

Disulfide constrained peptides (DCPs) show great potential as templates for drug discovery. We developed DCPs binding to membrane-bound E3 ubiquitin ligases. They can be used to develop strategies for targeted protein degradation at the plasma membrane. These DCPs can be produced synthetically or recombinantly, providing great versatility compared with large biologics or small molecules.

2:10 Targeting Tissue-Specific E3 Ligases

Stephen W. Fesik, PhD, Professor of Biochemistry, Pharmacology & Chemistry; Orrin H. Ingram II Chair in Cancer Research, Vanderbilt University

Only a handful of ligands are available for > 600 known E3 ligases. Using fragment-based methods and structure-based design, we have discovered ligands for additional E3 ligases that are tissue specific and are only present in cancer cells but not normal tissue. We are using these ligands to create less toxic PROTACS for cancer therapy.

2:40 Presentation to be Announced

Selvita

2:55 Sponsored Presentation *(Opportunity Available)*

3:10 In-Person Breakouts

See Breakouts page on the conference website for details.

3:55 Refreshment Break in the Exhibit Hall with Poster Viewing

4:45 Structural Insights into DCAF1 Substrate Specificity and Interaction with PROTACs

Masoud Vedadi, PhD, Senior Scientific Advisor, Drug Discovery, Ontario Institute for Cancer Research

Effectiveness of PROTACs necessitates addition of new substrate receptors and E3 ligases to avoid resistance. DCAF1 is a substrate receptor of EDVP and CUL4 E3 ligases with diverse substrate specificity. We will discuss structural insights into a mechanism by which DCAF1 could gain such diverse substrate specificity and describe why it could be a reliable and possibly better alternative to the commonly used E3 substrate receptors for development of PROTACs.

5:15 Proteomics-Enabled E3 Ligase Discovery

Angelo Andres, Senior Scientist, Chemical Biology, AstraZeneca Pharmaceuticals

Generating therapeutic targeting hypothesis for drugging proteins lacking traditional binding pockets is critical for tackling unprecedented targets. We describe a proximity labeling proteomics approach for revealing putative regulatory E3 ligases as a strategy-generating platform by targeting existing complexes via induced proximity. Furthermore, we discuss considerations for deploying this approach and bioinformatics strategies for increased confidence of putative hits.

5:45 Close of Day

5:45 Dinner Short Course Registration

6:15 Dinner Short Course*

SC5: Protein Degraders: An *in vivo* ADME and Safety Perspective

*Premium Pricing or separate registration required. See Short Courses page for details.

THURSDAY, APRIL 17

7:15 am Registration Open

7:45 Breakfast Panel Discussion: Diversity in Chemistry (People, Not Molecules) *(Sponsorship Opportunity Available)*

Grab a plate and then a seat to join a panel discussion about growing the enterprise of chemistry. This session originated with a focus on 'Women in Chemistry,' but every year the discussion expands. This year's likely focus will be Paternity Leave and Mentoring. But much of the discussion will be guided by audience interest and participation. Check back for a list of more specific topics and panelists.

PLENARY KEYNOTE SESSION

8:30 Plenary Welcome Remarks from Lead Content Director

Anjani Shah, PhD, Senior Conference Director, Cambridge Healthtech Institute

8:40 PLENARY KEYNOTE: Simplifying Synthesis with Radicals

Phil Baran, PhD, Chair & Professor, Department of Chemistry, Scripps Research Institute

Our latest findings on how the use of radical cross-coupling can dramatically simplify the practice of medicinal chemistry will be presented through the invention of reactions that have wide-substrate scope, use ubiquitous starting materials, and are experimentally trivial to conduct.

9:25 Coffee Break in the Exhibit Hall with Poster Viewing and Best of Show Awards Announced

PROXIMITY & MOLECULAR GLUE STRATEGIES

10:15 Chairperson's Remarks

Anwesha Dey, PhD, Director & Distinguished Scientist, Discovery Oncology, Genentech Inc.

10:20 FEATURED PRESENTATION: Rewiring Cancer Drivers to Activate Programmed Cell Death Using Chemical Induced Proximity (CIP)

Gerald Crabtree, MD, David Korn Professor of Experimental Pathology & Developmental Biology, Stanford University

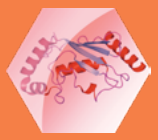
We are developing small molecules (TCIPs or SCIP for Transcriptional/epigenetic or Signaling Chemical Inducers of Proximity) that rewire mutated cancer drivers to activate powerful and specific pathways of programmed cell death. TCIPs induce proximity of the cancer driver to the promoters of proapoptotic BH3-only genes, rapidly reversing their epigenetic repression and activating cell death. In PDX models they eliminate specific lymphomas without significant toxicity.

10:50 FEATURED PRESENTATION: Reimagining Druggability Using Chemoproteomic Platforms

Daniel Nomura, PhD, Professor of Chemical Biology and Molecular Therapeutics, Department of Chemistry, University of California, Berkeley

One of the greatest challenges that we face in discovering new disease therapies is that most proteins are considered "undruggable," in that most proteins do not possess known binding pockets or "ligandable hotspots" that small-molecules can bind to modulate protein function. Our research group addresses this challenge by advancing and applying chemoproteomic platforms to discover and pharmacologically target unique and novel ligandable hotspots for disease therapy.

11:20 Sponsored Presentation *(Opportunity Available)*



8th Annual

Degraders & Molecular Glues — Part 2

Pursuing Diverse Targets, Exploring New Ligases and Degradation Pathways

11:35 Biophysical and Structural Characterization of the Molecular Glue-Mediated Interaction of Transcription Factors with Cereblon

Charles Wartchow, PhD, Associate Director, Global Discovery Chemistry, Novartis Institutes for BioMedical Research

Transcription factors are known to bind to cereblon in the presence of molecular glues and some reports implicate interactions with multiple zinc fingers. We present biophysical and structural assessments of the minimal binding domains of IKZF2 and other transcription factors, revealing that multiple zinc fingers interact with cereblon:glue complexes. In these examples, the binding modes are distinct and may have implications for the design of selective degraders.

12:05 pm PANEL DISCUSSION: Session Speakers Share Feedback on Degradation Approaches for Transcription Factors

Moderator: Anwesha Dey, PhD, Director & Distinguished Scientist, Discovery Oncology, Genentech Inc.

12:35 Transition to Lunch

12:40 Luncheon Presentation *(Sponsorship Opportunity Available)* **or Enjoy Lunch on Your Own**

1:10 Dessert Break in the Exhibit Hall with Poster Awards Announced *(Sponsorship Opportunity Available)*

VENTURE CAPITALIST INSIGHTS

2:00 PLENARY PANEL DISCUSSION: Venture Capitalist Insights into Trends in Drug Discovery

Moderator: Daniel A. Erlanson, PhD, Chief Innovation Officer, Innovation and Discovery, Frontier Medicines Corporation
Panelists:
James Edwards, PhD, Venture Partner, Samsara BioCapital
Seth Lieblich, PhD, Principal, 8VC
Swetha Murali, PhD, Vice President, OMX Ventures
Chris Smith, PhD, CSO Partner Team, Curie.Bio
Elena Viboch, Partner, General Catalyst
Wendy Young, PhD, Scientific Advisor; Board Director & Former Senior Vice President, Small Molecule Drug Discovery, Genentech

NOVEL INHIBITORS & DEGRADERS OF TRANSCRIPTION FACTORS

2:50 Chairperson's Remarks

Daniel A. Erlanson, PhD, Chief Innovation Officer, Innovation and Discovery, Frontier Medicines Corporation

2:55 Orally Bioavailable Selective SMARCA2 Degraders for Cancer Therapy

Susanta Samajdar, PhD, CSO, Aurigene Discovery Technologies Ltd.

Genetic-silencing studies have established that the oncogenic activity of tumors lacking SMARCA4 is primarily driven by SMARCA2-containing residual SWI/SNF complex, suggesting the importance of inhibiting SMARCA2. Although a few PROTAC degraders have been reported in the literature, they either lack adequate selectivity or oral bioavailability. We identified an exquisitely selective and highly potent orally bioavailable degrader of SMARCA2.

3:25 Targeting the Hippo Pathway in Cancers

Anwesha Dey, PhD, Director & Distinguished Scientist, Discovery Oncology, Genentech Inc.

3:55 Networking Refreshment Break

4:10 Development of Degrader Antibody Conjugates as Double Precision Anticancer Therapeutics

Jin Wang, PhD, Director, Biochemistry and Molecular Pharmacology, Baylor College of Medicine

Development of Degrader Antibody Conjugates (DACs) represents a novel therapeutic modality combining antibody specificity with targeted protein degradation. Our DAC has a GSPT1 molecular glue as the payload, enabling selective protein degradation in cancer cells. Different linker chemistries were compared for GSPT1 degradation efficiency and cellular potency. This dual-targeting approach demonstrates potent anti-tumor activity with improved therapeutic window compared to traditional ADCs.

4:40 Application of Biophysical Methods for Molecular Glue Discovery and Characterization

Alexandra Frommlet, Scientist, Biochemical and Cellular Pharmacology, Biophysics Group, Genentech Inc.

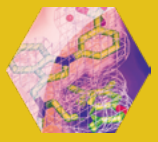
The application of biophysical methods in the discovery of molecular glue degraders will be presented. By leveraging techniques such as Surface Plasmon Resonance and Spectral Shift assays and putting emphasis on ternary complex affinity and kinetic characterization, novel molecular glues to an important oncology target protein have been identified and validated.

5:10 CG-SLENP: From Protein Labeling to PROTAC Therapeutic Opportunities

Xiangshu Xiao, PhD, Professor, Chemical Physiology & Biochemistry, Oregon Health & Science University

PROTACs are an emerging class of therapeutics for many disease areas including oncology. We recently developed a novel chemical genetics-based method to selectively label existing proteins and newly synthesized proteins (CG-SLENP) in living cells. Using this method, we found that existing proteins and newly synthesized proteins have drastically different responses to small molecule inhibitors and PROTACs. We further found that combining PROTACs and small molecule inhibitors show synergistic anticancer activities.

5:40 Close of Conference



18th Annual

Protein-Protein Interactions

Macrocyclic & Small Molecule Drug Leads Against Intracellular Protein Complexes

APRIL 16-17, 2025

WEDNESDAY, APRIL 16

12:00 pm Registration Open

CELL-PERMEABLE MACROCYCLICS FOR PPI TARGETS

1:30 Welcome Remarks

1:35 Chairperson's Remarks
Katerina Leftheris, PhD, formerly Chief Scientific Officer, Vilya Therapeutics

1:40 Macrocyclic Cell-Permeable Peptide Inhibitors of Cyclin A/B RxL: A New Class of Targeted Anti-Cancer Agents
James B. Aggen, PhD, Vice President of Medicinal Chemistry, Circle Pharma
I discuss a permeable-first strategy to evolve a macrocyclic peptide PPI hit into a cell-active lead. It is the first *in vivo* demonstration of cyclin A/B RxL inhibitors as a new class of targeted anti-cancer agents.

2:10 Macrocyclic Peptides Inhibiting Intracellular Protein-Protein Interaction Targets
Christian Heinis, PhD, Associate Professor, Lab of Therapeutic Proteins & Peptides, EPFL Lausanne
We have developed methods for nanoscale chemical synthesis and high-throughput screening of combinatorial libraries of tens of thousands of small, non-polar cyclic peptides that can passively cross membranes. After initial proof-of-concept screens against proteases, we have applied the approach to intracellular protein-protein interaction targets and recently identified cell-active inhibitors.

2:40 Sponsored Presentation *(Opportunity Available)*

3:10 In-Person Breakouts
See Breakouts page on the conference website for details.

3:55 Refreshment Break in the Exhibit Hall with Poster Viewing

INNOVATIVE APPROACHES FOR DIFFICULT TARGETS

4:45 A Platform for Allosteric Drug Discovery Targeting Protein-Protein Interactions: Focus on BCL-2 Family Proteins
Evris Gavathiotis, PhD, Professor, Biochemistry, Albert Einstein College of Medicine
We have developed an integrated computational and experimental methodology to identify allosteric sites and inhibitors of protein-protein interactions, specifically applied to select BCL-2 family proteins. My talk will highlight various structural, biochemical, and cellular methods used to uncover novel allosteric binding sites, providing insights into their functional relevance. I will particularly focus on the discovery of allosteric inhibitors targeting the anti-apoptotic BCL-XL protein, which holds therapeutic potential in modulating apoptosis.

5:15 Presentation to be Announced

5:45 Close of Day

5:45 Dinner Short Course Registration

6:15 Dinner Short Course*
SC8: Principles of Drug Design: Ligand-Receptor Interactions and More

*Premium Pricing or separate registration required. See Short Courses page for details.

THURSDAY, APRIL 17

7:15 am Registration Open

7:45 Breakfast Panel Discussion: Diversity in Chemistry (People, Not Molecules) *(Sponsorship Opportunity Available)*
Grab a plate and then a seat to join a panel discussion about growing the enterprise of chemistry. This session originated with a focus on 'Women in Chemistry,' but every year the discussion expands. This year's likely focus will be Paternity Leave and Mentoring. But much of the discussion will be guided by audience interest and participation. Check back for a list of more specific topics and panelists.

PLENARY KEYNOTE SESSION

8:30 Plenary Welcome Remarks from Lead Content Director
Anjani Shah, PhD, Senior Conference Director, Cambridge Healthtech Institute

8:40 PLENARY KEYNOTE: Simplifying Synthesis with Radicals
Phil Baran, PhD, Chair & Professor, Department of Chemistry, Scripps Research Institute
Our latest findings on how the use of radical cross-coupling can dramatically simplify the practice of medicinal chemistry will be presented through the invention of reactions that have wide-substrate scope, use ubiquitous starting materials, and are experimentally trivial to conduct.

9:25 Coffee Break in the Exhibit Hall with Poster Viewing and Best of Show Awards Announced

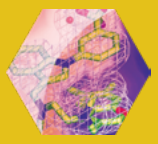
PPI STABILIZERS/ACTIVATORS/GLUES (NON-DEGRADING)

10:15 Chairperson's Remarks
Michelle Arkin, PhD, Chair and Distinguished Professor, Pharmaceutical Chemistry & Director, Small Molecule Discovery Center, University of California, San Francisco

10:20 Mechanism of Base-Exchange Inhibition of SARM1
Soo Ro, PhD, Senior Scientist I, Biophysics, Genentech Inc.
SARM1 is a highly oligomeric NAD hydrolase implicated in neuronal cell death after injury. Well established small molecules exist that inhibit SARM1 activity, via a base-exchange mechanism that prevents further hydrolysis. Here, we present extensive MOA characterization of base-exchange dependent SARM1 inhibition via biophysical and biochemical methods, in addition to discovery of an unexpected secondary MOA driven by inter-domain interactions with undesired observations.

10:50 p97/VCP and High-Throughput Protein Conformation Studies
Chad Altobelli, Graduate Student, Michelle Arkin Laboratory, Chemistry & Chemical Biology, University of California, San Francisco
VCP/p97 is a homohexameric AAA+ ATPase that is directed by more than 30 adaptor proteins to unfold a broad range of cellular targets, mediating their degradation. Our lab seeks to direct biology by developing conformational modulators of VCP that can stabilize interactions with subsets of adaptor proteins that share a conformational preference. To enable this project, we have engineered tools that report on VCP structure using changes in FRET efficiency.

11:20 Sponsored Presentation *(Opportunity Available)*



18th Annual

Protein-Protein Interactions

Macrocyclic & Small Molecule Drug Leads Against Intracellular Protein Complexes

11:35 Non-Degrading Molecular Glues: Application and Case Studies towards Hard-to-Drug Targets

Rick Ewing, PhD, Vice President and Head of Chemistry, Rapafusyn Pharmaceuticals

A large amount of the proteome remains undrugged. Rapafuysn's platform of non-degrading molecular glues is uniquely positioned to target intracellular proteins and the cytosolic side of transmembrane proteins. RapaGlues takes advantage of the exclusively cytosolic-residing FKBP12 to form ternary complexes with disease-target proteins. The presentation will describe successful hit campaigns for hard to drug targets and the strategy used for optimizing ADME properties to give drug-like molecules.

12:05 pm Targeting the Oncogenic State of RAS with Tri-Complex Inhibitors

Jingwei Yin, PhD, Scientist II Medicinal Chemistry, Discovery Chemistry, Revolution Medicines

We designed a series of tri-complex small molecule inhibitors targeting the GTP-bound, active state of RAS (RAS(ON)). The inhibitors bind non-covalently to abundant intracellular protein, cyclophilin A (CypA) which then selectively engages RAS(ON) and sterically prevents RAS interacting with its downstream effectors. We also describe mutant selective inhibitors that covalently engage RAS(ON) G12C, G13C and G12D respectively. Our RAS(ON) multi-selective inhibitors can also inhibit variants of KRAS, NRAS, and HRAS.

12:35 Transition to Lunch

12:40 Luncheon Presentation *(Sponsorship Opportunity Available)* **or Enjoy Lunch on Your Own**

1:10 Dessert Break in the Exhibit Hall with Poster Awards Announced *(Sponsorship Opportunity Available)*

VENTURE CAPITALIST INSIGHTS

2:00 PLENARY PANEL DISCUSSION: Venture Capitalist Insights into Trends in Drug Discovery

Moderator: Daniel A. Erlanson, PhD, Chief Innovation Officer, Innovation and Discovery, Frontier Medicines Corporation
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Wendy Young, PhD, Scientific Advisor; Board Director & Former Senior Vice President, Small Molecule Drug Discovery, Genentech

DEGRADER APPROACHES FOR KRAS

2:50 Chairperson's Remarks

Heike Wobst, PhD, Senior Scientist, Jnana Therapeutics

2:55 KRAS—Degrading the Undruggable

Martin Schmiedel, PhD, Principal Scientist I, Medicinal Chemistry, Boehringer Ingelheim

The KRAS protein, mutated in 20% of human cancers, was long considered undruggable. Recent breakthroughs led to the first KRAS G12C inhibitors, but need still persists for targeting other mutations. In collaboration with the Ciulli group we identified ACBI3, a KRAS degrader with high potency against a variety of KRAS mutations *in vitro* and *in vivo*. These promising preclinical results mark a significant stride towards broad-spectrum KRAS-targeting modalities.

3:25 Discovery and Development of Pan-KRAS Degraders for Cancer Therapy

Murali Ramachandra, PhD, CEO, Aurigene Oncology Ltd.

KRAS mutations are among the most prevalent and challenging targets in cancer. While only the KRAS G12C mutation currently has clinically approved therapies, there is a critical need for effective and durable treatments across all KRAS-driven cancers. We will present our success in identifying a development candidate that degrades all tested KRAS mutants, showcasing its potential as a promising therapeutic strategy for cancer treatment.

3:55 Networking Refreshment Break

COVALENT KRAS INHIBITORS

4:10 Discovery of FMC-376 a Potent Dual Inhibitor of 'ON' and 'OFF' States of KRASG12C Broadly Active in PDX Models of Resistance

Snahel Patel, Vice President, Head, Medicinal & Platform Chemistry, Frontier Medicines Corp.

Once viewed undruggable, frequently mutated oncogene KRAS has led to the recent approval of two $KRAS^{G12C}$ small molecule covalent inhibitors targeting the inactive GDP-bound (OFF) state. Patient benefit has fallen short with these first-generation inhibitors due to innate or acquired resistance driven by upregulation of the activated GTP-bound (ON) state of $KRAS^{G12C}$. We present the discovery of potent dual inhibitor FMC-376 targeting both active and inactive forms of $KRAS^{G12C}$.

4:40 Novel KRAS Inhibitors from Covalent DNA-Encoded Library Screening

Jingjing Xie, PhD, Senior Scientist, Chemistry, Amgen

Covalent inhibition of the KRASG12C oncoprotein has emerged as a promising therapeutic approach for the treatment of NSCLC. A covalent DEL screening was designed to screen approximately 16 million chemically diverse compounds against KRASG12C. The hit identification through this efficient screening followed by structure-based optimization allows for the discovery of a series of structurally novel, potent, and selective covalent inhibitors of KRASG12C with good pharmacokinetic profiles and promising pharmacodynamic effects.

5:10 Tyrosine-Targeted Covalent Fragments for KRAS

Samy O. Meroueh, PhD, Professor, Biochemistry; Member, Cancer Center Drug Discovery Program, University of Illinois Urbana-Champaign

I present my Ras GTPases (mainly Ral and KRAS) work where I used fragment-screening to develop covalent inhibitors that react with tyrosines. A tyrosine-based covalent approach expands the number of KRAS-origin cancers that can be targeted because only 10% of KRAS genes have the G12C mutation. I also discuss our progress with covalent inhibition of Ral GPTase using tyrosine and will present a unique KRAS structure that I recently published.

5:40 Close of Conference

7th Annual

AI/ML for Early Drug Discovery — Part 2

AI/ML for Exploring and Screening Complex Target Biology and Chemical Space

APRIL 16-17, 2025

WEDNESDAY, APRIL 16

12:00 pm Registration Open

AI/ML FOR PEPTIDE & ANTIBODY OPTIMIZATION

1:30 Welcome Remarks

1:35 Chairperson's Remarks
Ewa Lis, PhD, Founder & CEO, Koliber Biosciences

1:40 Peptide Hit Discovery and Optimization Using Machine Learning and Small Peptide Arrays
Ewa Lis, PhD, Founder & CEO, Koliber Biosciences
Standard peptide discovery methods like phage and mRNA display face issues like high false positives or costly licensing, limiting therapeutic advances. We introduce a platform merging Koliber's machine learning with RobustDx's peptide arrays, showing that large libraries are unnecessary and hits can be optimized to nanomolar binding affinity. Additionally, we present visualization techniques for binding mode detection and offer insights into the future of ML-driven peptide optimization.

2:10 AlphaBind, a Domain-Specific Model to Predict and Optimize Antibody-Antigen Binding Affinity
Ryan Emerson, PhD, Vice President, Data Science, A Alpha Bio Inc.
We present AlphaBind, a domain-specific model achieving state-of-the-art performance in optimizing antibody affinity using protein language model embeddings and extensive pre-training. We demonstrate affinity optimization for four antibodies with just one round of training data generation per antibody, and we demonstrate the use of a fine-tuned AlphaBind model to guide downstream engineering for biodevelopability and germline reversion for one antibody. AlphaBind weights and code are publicly available.

2:40 Sponsored Presentation *(Opportunity Available)*

3:10 In-Person Breakouts
See Breakouts page on the conference website for details.

3:55 Refreshment Break in the Exhibit Hall with Poster Viewing

4:45 Unlocking Challenging Cardio-Metabolic Targets for Antibody Drug Discovery with Protein Engineering and Design
Alexander Taguchi, PhD, Director, Machine Learning, Antibody Discovery, iBio, Inc.
Cardio-metabolics as a therapeutic area has surged in interest. Here we describe a machine learning (ML) protein design platform for efficient antibody discovery against the TGFβ superfamily. This approach produces epitope-specific antibodies even when the target is unavailable for screening. ML is leveraged to design (1) soluble protein representations of the target for epitope-selective antibody discovery and (2) antibody libraries to optimize the paratope space for high-value cardio-metabolic targets.

5:15 PANEL DISCUSSION: Session Speakers Discuss the Future of AI/ML-Driven Peptide/Antibody Design and Optimization
Moderator: Ewa Lis, PhD, Founder & CEO, Koliber Biosciences

5:45 Close of Day

5:45 Dinner Short Course Registration

6:15 Dinner Short Course*
SC7: AI Applications in Drug Development: Strategies for Innovation and Integration

*Premium Pricing or separate registration required. See Short Courses page for details.

THURSDAY, APRIL 17

7:15 am Registration Open

7:45 Breakfast Panel Discussion: Diversity in Chemistry (People, Not Molecules) *(Sponsorship Opportunity Available)*
Grab a plate and then a seat to join a panel discussion about growing the enterprise of chemistry. This session originated with a focus on 'Women in Chemistry,' but every year the discussion expands. This year's likely focus will be Paternity Leave and Mentoring. But much of the discussion will be guided by audience interest and participation. Check back for a list of more specific topics and panelists.

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Anjani Shah, PhD, Senior Conference Director, Cambridge Healthtech Institute

8:40 PLENARY KEYNOTE: Simplifying Synthesis with Radicals
Phil Baran, PhD, Chair & Professor, Department of Chemistry, Scripps Research Institute
Our latest findings on how the use of radical cross-coupling can dramatically simplify the practice of medicinal chemistry will be presented through the invention of reactions that have wide-substrate scope, use ubiquitous starting materials, and are experimentally trivial to conduct.

9:25 Coffee Break in the Exhibit Hall with Poster Viewing and Best of Show Awards Announced

AI-BASED SCREENING FOR TARGETS & LEADS

10:15 Chairperson's Remarks
Ruben Abagyan, PhD, Professor, Skaggs School of Pharmacy and Pharmaceutical Sciences, University of California, San Diego

10:20 Ultrafast Screening and Optimization in Allosteric Pockets with 3D/AI-CPU/GPU Pipeline: Flavivirus Proteases and More
Ruben Abagyan, PhD, Professor, Skaggs School of Pharmacy and Pharmaceutical Sciences, University of California, San Diego
Finding the first potent and selective inhibitors against a transient, allosteric, or protein-protein interaction pocket is a challenge requiring multiple levels of data, tools, profile definitions, and ultra large screens combined with *in silico* compound optimization. We present a cloud-based CPU/GPU pipeline designed for that purpose and its application for identifying drug candidates among multibillion compounds. Examples with anti-cancer targets and inhibitors of anti-flaviviral proteases are presented.

10:50 Novel AI-Based Methods for Ultra-Large and Ultra-Fast Virtual Screening in Drug Discovery
Leif Eriksson, PhD, Professor, Chemistry & Molecular Biology, University of Gothenburg
The druglike chemical space of available molecular databases contains ~10^{10} molecules, and grows faster than traditional screening approaches can handle. We present benchmarked methods that circumvent conformational sampling, enabling ultra-large and ultra-fast screening, including a novel AI-based scoring function, generative AI, and scaffold optimization. We also report on a data-driven molecular descriptor model using Neural Machine Translation, for effectively predicting protonation states, performing similarity searches, and generating molecular derivatives.

11:20 Sponsored Presentation *(Opportunity Available)*

7th Annual

AI/ML for Early Drug Discovery — Part 2

AI/ML for Exploring and Screening Complex Target Biology and Chemical Space

11:35 AI-Driven Virtual Screening and Polypharmacology Analysis
Sita Sirisha Madugula, PhD, Postdoctoral Research Associate, Center for Nanophase Materials Sciences, Oak Ridge National Laboratory
Our research demonstrates the potential of AI and machine learning in drug repurposing, specifically for tuberculosis (TB). Through unsupervised learning and polypharmacology approaches, we identified FDA-approved drugs with potential for repurposing by analyzing molecular descriptors and multi-target interactions. These methods offer efficient pathways to explore chemical and biological spaces, providing new insights into drug efficacy and paving the way for therapeutic solutions in infectious and non-infectious diseases.

12:05 pm Discussion with Session Speakers on Strategies for Exploring Chemical and Biological Spaces Using AI/ML Tools
Moderator: Ruben Abagyan, PhD, Professor, Skaggs School of Pharmacy and Pharmaceutical Sciences, University of California, San Diego

12:35 Transition to Lunch

12:40 Luncheon Presentation *(Sponsorship Opportunity Available)* **or Enjoy Lunch on Your Own**

1:10 Dessert Break in the Exhibit Hall with Poster Awards Announced *(Sponsorship Opportunity Available)*

VENTURE CAPITALIST INSIGHTS

2:00 PLENARY PANEL DISCUSSION: Venture Capitalist Insights into Trends in Drug Discovery
Moderator: Daniel A. Erlanson, PhD, Chief Innovation Officer, Innovation and Discovery, Frontier Medicines Corporation
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Wendy Young, PhD, Scientific Advisor; Board Director & Former Senior Vice President, Small Molecule Drug Discovery, Genentech

CHALLENGES INTEGRATING DIVERSE DATA

2:50 Chairperson's Remarks

2:55 Harmonizing Diverse Data Types and Sources for Drug Discovery and Machine Learning
Peter Canning, PhD, Principal Scientist, Protein & Structural Sciences, CHARM Therapeutics
Evidence has shown that the functional performance of many ML models improves with target-specific training data. We have established a platform to collect and organize various internal and external data sources to inform drug discovery projects and train ML models for improved output confidence. DragonFold is CHARM therapeutics' state-of-the-art co-folding platform for prediction of ligand-bound protein structures.

3:25 AI Methods to Integrate Multi-Modal Omics, Spatial, and Single-Cell Profiling to Identify Mechanisms and Potential Therapeutic Opportunities
Arvind Rao, PhD, Associate Professor, Department of Computational Medicine and Bioinformatics, University of Michigan
Spatial profiling technologies coupled with scRNAseq enable a multi-factorial, multi-modal characterization of the tissue microenvironment. Objective scoring methods inspired by recent advances in statistics and ML can aid the interpretation of these datasets, as well as their integration with companion data like bulk and single-cell genomics. I will discuss analysis paradigms from ML that can be used to integrate and prioritize gene regulatory programs (and therapeutic candidates) underlying oncogenesis.

3:55 Networking Refreshment Break

MACHINE-LEARNING & DNA-ENCODED LIBRARY TECHNOLOGY

4:10 Machine Learning for 3D-Aware Molecular Representations in DEL
Angelina Heyler, PhD, Data Engineer, Encoded Libraries, GSK
DNA-encoded libraries (DELs) enable screening billions of ligands against protein targets of interest. To select hits for off-DNA evaluation, quantitative structure-activity relationship (QSAR) modeling is frequently used to find structural features that contribute to enrichment. However, current QSAR typically relies on 2D molecular representations. We leverage machine learning to learn 3D molecular representations for application in hit selection.

4:40 Ligandability of WDR-Containing Proteins Using DEL Then ML
Peter J. Brown, PhD, Chemical Probes, University of North Carolina at Chapel Hill
Target class–focused drug discovery has a strong track record in pharmaceutical research, yet public domain data indicate that many protein families remain unliganded. Here we present a systematic approach to scale up the discovery and characterization of small molecule ligands for the WD40 repeat (WDR) protein family using DNA-encoded chemical library selection followed by machine learning (DEL-ML). Our campaign yielded first-in-class ligands for 7 of the 16 WDR domains screened.

5:10 DELs in Medicinal Chemist's Toolbox: Applications beyond Hit Discovery
Kirill Novikov, PhD, Principal Scientist, High Throughput Chemistry, insitro
We employ targeted second-generation DELs for efficient exploration of chemical space surrounding hit structures. By employing affinity-based electrophoretic separations, we can rank DEL members, facilitating early structure-activity relationship (SAR) hypothesis formation and machine-learning model training to refine predictive accuracy in this chemical environment. We will showcase design and construction of 3 second-generation DELs: one based on a DEL hit, another on a literature compound, and third on virtual docking.

5:40 Close of Conference

7th Annual

DNA-Encoded Libraries

Expanding Chemical Space for Small Molecule-Based Drug Discovery

WEDNESDAY, APRIL 16

12:00 pm Registration Open

DNA-ENCODED LIBRARIES (DEL) & MOLECULAR DEGRADER DISCOVERY

1:30 Welcome Remarks

1:35 Chairperson's Remarks

Christopher B. Phelps, PhD, Vice President and Head, Early Discovery, Nurix Therapeutics, Inc.

1:40 Phenotypic DEL in Droplets for TPD and Beyond

Ken Yamada, PhD, Associate Director, Global Discovery Chemistry, Novartis BioMedical Research

This talk will describe microfluidics-enabled cellular phenotypic DEL workflow—MicDrop. We will introduce cellular DEL screen in droplets, followed by results from a cellular protein degradation screen with a validation library, as well as another set of screens with a prospective library. Our results show the benefits of bead replicates and how this new paradigm of DEL screen can accelerate the field of molecular glue discovery for TPD and beyond.

2:10 A "Low Tech" Platform for Activity-Based Screens of DNA-Encoded Libraries & Applications to Molecular Glue Discovery

Thomas Kodadek, PhD, Professor, Department of Chemistry, University of Florida, Scripps Biomedical Research

There is considerable interest in the development of platforms for screening DNA-encoded libraries (DELs) functionally, that is for agonists or antagonists of a given process. The only existing methods require specialized microfluidics infrastructure. We present here a "low tech" platform that allows one-bead-one-compound DELs to be screened for compounds capable of mediating various post-translational modifications, including poly-Ubiquitylation, of a protein of interest.

2:40 Sponsored Presentation *(Opportunity Available)*

3:10 In-Person Breakouts

See Breakouts page on the conference website for details.

3:55 Refreshment Break in the Exhibit Hall with Poster Viewing

4:45 DEL Approaches for Molecular Degrader Discovery

Christopher B. Phelps, PhD, Vice President and Head, Early Discovery, Nurix Therapeutics, Inc.

5:15 Bridging the DEL Divide: A Cross-Pharma Library Building Consortium

Sylvie K. Sakata, PhD, Executive Director & Head, External Research Solutions, Pfizer Inc.

I will give an overview about the recently created DEL Consortium and present the advantages and learnings it provides on pre-competitive collaboration in the pharma industry.

5:45 Close of Day

5:45 Dinner Short Course Registration

6:15 Dinner Short Course*

SC9: DNA-Encoded Libraries

*Premium Pricing or separate registration required. See Short Courses page for details.

THURSDAY, APRIL 17

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DNA-ENCODED LIBRARY INNOVATIONS

10:15 Chairperson's Remarks

Carol Mulrooney, PhD, Investigator, Cheminformatics, GlaxoSmithKline

10:20 Activity-Based DEL at the Limit of Detection

Brian M. Paegel, PhD, Professor, Pharmaceuticals Sciences, University of California, Irvine

I will discuss our progress toward further miniaturizing and automating the split-and-pool synthesis of solid-phase DELs and a new microfluidics-free approach to activity-based and cellular DEL screening.

10:50 On-DNA Binder Confirmation: Increasing Confidence in DEL Hits

Karli Holman, PhD, Investigator (Encoded Technologies Lead Discovery Chemistry), GSK

DEL hits have traditionally been evaluated via off-DNA resynthesis and biological testing. This approach can be time- and resource-intensive, limiting the number of putative hits selected for follow-up, and hits often fail to confirm off-DNA. On-DNA hit resynthesis increases throughput and emulates the original library synthesis, enabling identification of side product binders. Here we share GSK's application of on-DNA binder confirmation to evaluate and expand hits from DEL screens.

11:20 Sponsored Presentation *(Opportunity Available)*

11:35 Enhancing Lead Discovery Using Target-Focused DNA-Encoded Chemical Libraries

Srinivas Chamakuri, PhD, Assistant Professor, Pathology & Immunology, Baylor College of Medicine

DNA-Encoded Chemistry Technology is a cost-effective, rapidly advancing platform designed to identify drug-like molecules with high-affinity binding to target proteins. Instead of constructing DELs aimed at broadly modulating

various targets, our approach initiates with a specific target in mind, creating a smaller, tailored DEL to enhance precision. This targeted library design improves the quality and possibility of positive hits by leveraging structural and binding insights specific to the target protein.

12:05 pm Case Studies Comparing Screening Small vs. Large DNA-Encoded Libraries
Timothy L. Foley, PhD, Senior Principal Scientist & Lab Head, DNA Encoded Library Selection & Pharmacology, Pfizer Global R&D Groton Labs
I will present a platform-science based 'lessons learned' talk from two case studies of screening 'small' and 'big' DEL libraries. The presentation emphasizes the importance of library size and chemical diversity.

12:35 Transition to Lunch

12:40 Luncheon Presentation *(Sponsorship Opportunity Available)* **or Enjoy Lunch on Your Own**

1:10 Dessert Break in the Exhibit Hall with Poster Awards Announced *(Sponsorship Opportunity Available)*

VENTURE CAPITALIST INSIGHTS

2:00 PLENARY PANEL DISCUSSION: Venture Capitalist Insights into Trends in Drug Discovery
Moderator: Daniel A. Erlanson, PhD, Chief Innovation Officer, Innovation and Discovery, Frontier Medicines Corporation
Panelists:
James Edwards, PhD, Venture Partner, Samsara BioCapital
Seth Lieblich, PhD, Principal, 8VC
Swetha Murali, PhD, Vice President, OMX Ventures
Chris Smith, PhD, CSO Partner Team, Curie.Bio
Elena Viboch, Partner, General Catalyst
Wendy Young, PhD, Scientific Advisor; Board Director & Former Senior Vice President, Small Molecule Drug Discovery, Genentech

DEL-ORIGIN COMPOUNDS

2:50 Chairperson's Remarks
Jack D. Scott, PhD, Director, Discovery Chemistry, Merck & Co.

2:55 PRMT5 Inhibitors via DEL Screening
Sanne Glad, PhD, Principal Scientist & Project Leader, Lead Discovery, Amgen
Using a co-factor directed screening strategy and DNA-encoded libraries, a class of MTA-cooperative PRMT5 inhibitors was identified. Structural studies show that the hit series occupies the arginine substrate pocket of MTA-bound PRMT5, while simultaneously exhibiting a hydrophobic interaction to MTA. Further optimisation led to lead compounds, which potently and selectively inhibit PRMT5 in MTAP-deleted cells and show *in vivo* efficacy in an MTAP-deleted cancer cell model.

3:25 RSV Polymerase Inhibitors with New Binding Modes: Identified by DEL & High-Throughput Screening
Minh Thao Tran, PhD, Principal Scientist, Discovery Chemistry, Johnson & Johnson Innovative Medicine
DNA-Encoded Libraries and Biochemical screens identified two Respiratory Syncytial Virus polymerase-inhibiting ligands with differentiated chemotype and binding modes. The two binding sites were confirmed by cryo-EMs, of which one was a hitherto undescribed binding pocket. Hit-to-lead effort expanded SAR for both series and confirmed their antiviral activities, while mapping out potential vectors for improvement in potency and other parameters. Scaffold hopping further aided optimization by diversifying the chemical matter.

3:55 Networking Refreshment Break

MACHINE-LEARNING & DNA-ENCODED LIBRARY TECHNOLOGY

4:10 Machine Learning for 3D-Aware Molecular Representations in DEL
Angelina Heyler, PhD, Data Engineer, Encoded Libraries, GSK
DNA-encoded libraries (DELs) enable screening billions of ligands against protein targets of interest. To select hits for off-DNA evaluation, quantitative structure-activity relationship (QSAR) modeling is frequently used to find structural features that contribute to enrichment. However, current QSAR typically relies on 2D molecular representations. We leverage machine learning to learn 3D molecular representations for application in hit selection.

4:40 Ligandability of WDR-Containing Proteins Using DEL Then ML
Peter J. Brown, PhD, Chemical Probes, University of North Carolina at Chapel Hill
Target class–focused drug discovery has a strong track record in pharmaceutical research, yet public domain data indicate that many protein families remain unliganded. Here we present a systematic approach to scale up the discovery and characterization of small molecule ligands for the WD40 repeat (WDR) protein family using DNA-encoded chemical library selection followed by machine learning (DEL-ML). Our campaign yielded first-in-class ligands for 7 of the 16 WDR domains screened.

5:10 DELs in Medicinal Chemist's Toolbox: Applications beyond Hit Discovery
Kirill Novikov, PhD, Principal Scientist, High Throughput Chemistry, insitro
We employ targeted second-generation DELs for efficient exploration of chemical space surrounding hit structures. By employing affinity-based electrophoretic separations, we can rank DEL members, facilitating early structure-activity relationship (SAR) hypothesis formation and machine-learning model training to refine predictive accuracy in this chemical environment. We will showcase design and construction of 3 second-generation DELs: one based on a DEL hit, another on a literature compound, and third on virtual docking.

5:40 Close of Conference

3rd Annual

Drugging Transcription Factors & Regulators

Small Molecules to Pursue TFs, Chromatin Remodelers, Epigenetic Regulators, Co-Factors

WEDNESDAY, APRIL 16

12:00 pm Registration Open

CHEMOPROTEOMICS STRATEGIES FOR TARGETING TRANSCRIPTION

1:30 Welcome Remarks

1:35 Chairperson's Remarks
Alexander Federation, PhD, Co-Founder & CEO, Talus Bioscience

1:40 Chemoproteomic Strategies for Developing Transcription Factor Modulators
Andrew Wang, PhD, Director of Platform, Belharra Therapeutics
Targets such as transcription factors are often challenging to study in recombinant or biochemical settings as they require native cellular localization, PTMs, and complexation to fold and function properly. Applying our proprietary chemoproteomics platform, Belharra has enabled ligand discovery campaigns in live cells which have uncovered tractable ligands for TFs important in disease pathology. Several examples of these ligand discovery and development efforts will be discussed.

2:10 Redirecting the Pioneering Function of FOXA1 with Covalent Small Molecules
Michael Won, PhD, Postdoctoral Associate, Laboratory of Dr. Benjamin Cravatt, Department of Chemistry, The Scripps Research Institute
Pioneer transcription factors (TFs) bind to and open closed chromatin, facilitating engagement by other regulatory factors involved in gene activation or repression. We present the chemical proteomic discovery of covalent small molecules that stereoselectively and site-specifically engage the pioneer TF, FOXA1. These compounds rapidly remodel FOXA1 interactions with chromatin in prostate cancer cell and create corresponding changes in chromatin accessibility through relaxing the DNA-binding preferences of FOXA1.

2:40 Presentation to be Announced

3:10 In-Person Breakouts
See Breakouts page on the conference website for details.

3:55 Refreshment Break in the Exhibit Hall with Poster Viewing

4:45 Development of TEAD Inhibitors & Degraders
Samy O. Meroueh, PhD, Professor, Biochemistry; Member, Cancer Center Drug Discovery Program, University of Illinois Urbana-Champaign

5:15 AI-Guided Discovery of Covalent Inhibitors for Intrinsically Disordered Transcription Factors
Alexander Federation, PhD, Co-Founder & CEO, Talus Bioscience
Strategian, a deep tensor factorization model built on Talus Bio's TF-Scan platform, enables discovery of TF-targeted therapeutics by predicting compound effects on TF activity across billions of drug-like molecules. Predicted TF inhibitors are confirmed in TF-Scan, which profiles compound-TF interactions in a native context. The model prioritizes candidates by potency and selectivity, followed by triage in TF-Scan. We identified novel scaffolds for STAT3, and direct inhibitors of IRF5.

5:45 Close of Day

5:45 Dinner Short Course Registration

6:15 Dinner Short Course*
SC6: Chemical Biology for Covalent Drug Discovery, Phenotypic Screening, and Target Deconvolution

*Premium Pricing or separate registration required. See Short Courses page for details.

THURSDAY, APRIL 17

7:15 am Registration Open

7:45 Breakfast Panel Discussion: Diversity in Chemistry (People, Not Molecules) *(Sponsorship Opportunity Available)*
Grab a plate and then a seat to join a panel discussion about growing the enterprise of chemistry. This session originated with a focus on "Women in Chemistry," but every year the discussion expands. This year's likely focus will be Paternity Leave and Mentoring. But much of the discussion will be guided by audience interest and participation. Check back for a list of more specific topics and panelists.

PLENARY KEYNOTE SESSION

8:30 Plenary Welcome Remarks from Lead Content Director
Anjani Shah, PhD, Senior Conference Director, Cambridge Healthtech Institute

8:40 PLENARY KEYNOTE: Simplifying Synthesis with Radicals
Phil Baran, PhD, Chair & Professor, Department of Chemistry, Scripps Research Institute
Our latest findings on how the use of radical cross-coupling can dramatically simplify the practice of medicinal chemistry will be presented through the invention of reactions that have wide-substrate scope, use ubiquitous starting materials, and are experimentally trivial to conduct.

9:25 Coffee Break in the Exhibit Hall with Poster Viewing and Best of Show Awards Announced

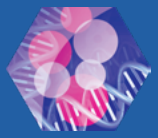
PROXIMITY & MOLECULAR GLUE STRATEGIES

10:15 Chairperson's Remarks
Anwesha Dey, PhD, Director & Distinguished Scientist, Discovery Oncology, Genentech Inc.

10:20 FEATURED PRESENTATION: Rewiring Cancer Drivers to Activate Programmed Cell Death Using Chemical Induced Proximity (CIP)
Gerald Crabtree, MD, David Korn Professor of Experimental Pathology & Developmental Biology, Stanford University
We are developing small molecules (TCIPs or SCIP for Transcriptional/epigenetic or Signaling Chemical Inducers of Proximity) that rewire mutated cancer drivers to activate powerful and specific pathways of programmed cell death. TCIPs induce proximity of the cancer driver to the promoters of proapoptotic BH3-only genes, rapidly reversing their epigenetic repression and activating cell death. In PDX models they eliminate specific lymphomas without significant toxicity.

10:50 FEATURED PRESENTATION: Reimagining Druggability Using Chemoproteomic Platforms
Daniel Nomura, PhD, Professor of Chemical Biology and Molecular Therapeutics, Department of Chemistry, University of California, Berkeley
One of the greatest challenges that we face in discovering new disease therapies is that most proteins are considered "undruggable," in that most proteins do not possess known binding pockets or "ligandable hotspots" that small-molecules can bind to modulate protein function. Our research group addresses this challenge by advancing and applying chemoproteomic platforms to discover and pharmacologically target unique and novel ligandable hotspots for disease therapy.

11:20 Sponsored Presentation *(Opportunity Available)*



3rd Annual

Drugging Transcription Factors & Regulators

Small Molecules to Pursue TFs, Chromatin Remodelers, Epigenetic Regulators, Co-Factors

11:35 Biophysical and Structural Characterization of the Molecular Glue-Mediated Interaction of Transcription Factors with Cereblon

Charles Wartchow, PhD, Associate Director, Global Discovery Chemistry, Novartis Institutes for BioMedical Research

Transcription factors are known to bind to cereblon in the presence of molecular glues and some reports implicate interactions with multiple zinc fingers. We present biophysical and structural assessments of the minimal binding domains of IKZF2 and other transcription factors, revealing that multiple zinc fingers interact with cereblon:glue complexes. In these examples, the binding modes are distinct and may have implications for the design of selective degraders.

12:05 pm PANEL DISCUSSION: Session Speakers Share Feedback on Degradation Approaches for Transcription Factors

Moderator: Anwesha Dey, PhD, Director & Distinguished Scientist, Discovery Oncology, Genentech Inc.

12:35 Transition to Lunch

12:40 Luncheon Presentation *(Sponsorship Opportunity Available)* **or Enjoy Lunch on Your Own**

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Wendy Young, PhD, Scientific Advisor; Board Director & Former Senior Vice President, Small Molecule Drug Discovery, Genentech

NOVEL INHIBITORS & DEGRADERS OF TRANSCRIPTION FACTORS

2:50 Chairperson's Remarks

Daniel A. Erlanson, PhD, Chief Innovation Officer, Innovation and Discovery, Frontier Medicines Corporation

2:55 Orally Bioavailable Selective SMARCA2 Degraders for Cancer Therapy

Susanta Samajdar, PhD, CSO, Aurigene Discovery Technologies Ltd.

Genetic-silencing studies have established that the oncogenic activity of tumors lacking SMARCA4 is primarily driven by SMARCA2-containing residual SWI/SNF complex, suggesting the importance of inhibiting SMARCA2. Although a few PROTAC degraders have been reported in the literature, they either lack adequate selectivity or oral bioavailability. We identified an exquisitely selective and highly potent orally bioavailable degrader of SMARCA2.

3:25 Targeting the Hippo Pathway in Cancers

Anwesha Dey, PhD, Director & Distinguished Scientist, Discovery Oncology, Genentech Inc.

3:55 Networking Refreshment Break

4:05 Chairperson's Remarks

Marina Nelen, PhD, VP & Head, Drug Discovery, Foghorn Therapeutics

4:10 Development of a Dual SMARCA2/4 Inhibitor

Shawn Schiller, Director, Medicinal Chemistry, Foghorn Therapeutics

BRM (SMARCA2) and BRG1 (SMARCA4) are mutually exclusive ATPase subunits of the mSWI/SNF (BAF) chromatin remodeling complex. BAF is an attractive therapeutic target because of its role in transcription, and mutations in the subunits of BAF are common in cancer and neurological disorders. Herein, we report the discovery of FHD-286, as a potent allosteric inhibitor of the dual ATPase subunits that is being evaluated in Phase 1 clinical trials.

4:40 Reinforced Dynamics Platform Empowers the Discovery of Novel Inhibitors and Degraders of Transcription Factor c-Myc

Dongdong Li, PhD, Director, Medicinal Chemistry, DP Technology
Dongdong Wang, PhD, Co-President, Drug Discovery, DP Technology

By utilizing the RiDYMO platform, followed by experimental validation, we have identified novel small-molecule inhibitors that directly target c-Myc. The hit compound DP390 directly binds to the c-Myc (evidenced by SPR/FP/STD-NMR), effectively disrupting the interaction between c-Myc and Max, promoting the instability and degradation of c-Myc protein, and affecting downstream transcriptional functions. The degraders designed based on optimized small molecules exhibit nanomolar potency in cells and also directly target c-Myc.

5:10 Cell Penetrating Nano-Antibody, SBT-100, Inhibits Transcription Factor STAT3 for Therapeutic Response

Sunanda Singh, Founder & CEO & President, Singh Biotechnology LLC

SBT-100 is approximately 15kD VHH derived nano-antibody which crosses the cell membrane and blood brain barrier (BBB) in less than 15 minutes *in vivo*. It binds to the transcription factor STAT3 (signal transducer activator of transcription 3) and inhibits its function. SBT-100 inhibits STAT3's phosphorylation (i.e., activation), translocation to the nucleus, and binding to its DNA promoter. It is effective at inhibiting human cancer growth *in vitro* and *in vivo*.

5:40 Close of Conference

HOTEL & TRAVEL

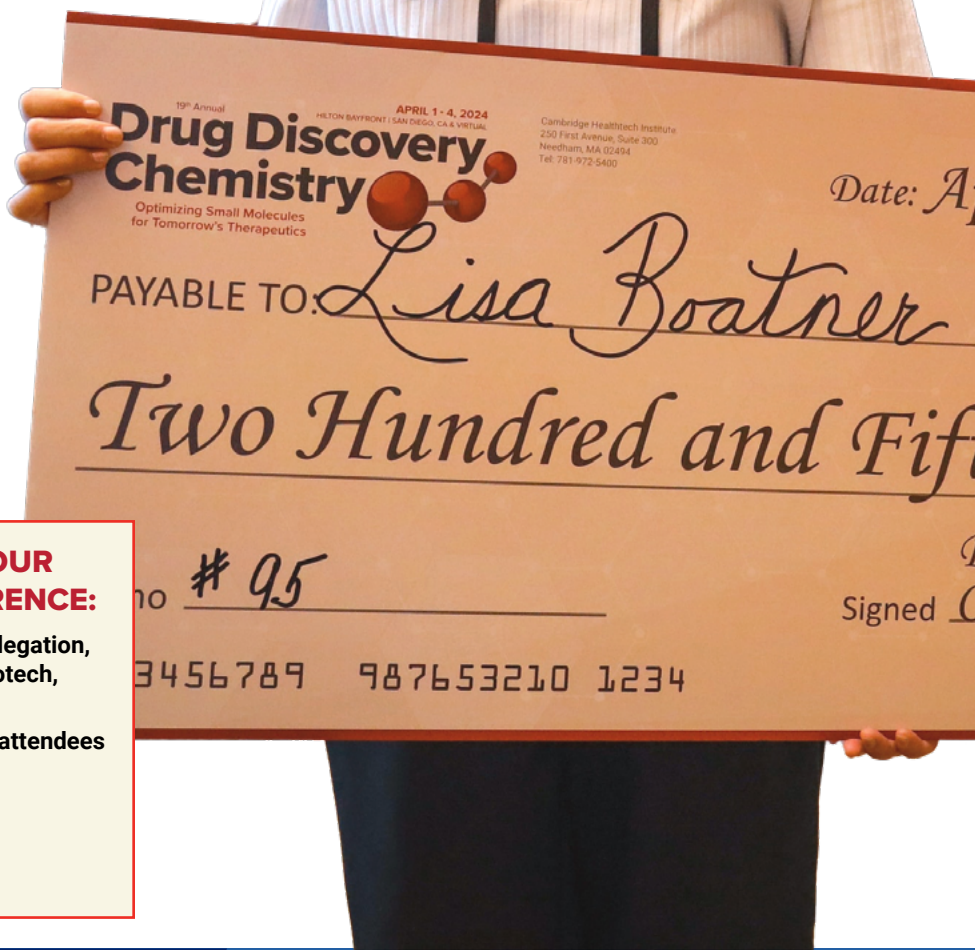
Conference Venue and Host Hotel:
Hilton San Diego Bayfront
1 Park Boulevard
San Diego, CA 92101

Discounted Room Rate: $320
Discounted Room Rate Cut-off Date: March 18, 2025

Visit the Travel page of DrugDiscoveryChemistry.com to make your hotel reservations and for additional information

PRESENT YOUR RESEARCH POSTER AT DRUG DISCOVERY CHEMISTRY

Cambridge Healthtech Institute encourages attendees to gain further exposure by presenting their work in the poster sessions. To secure an onsite poster board and/or ensure your poster is included in the conference materials, your full submission must be received, and your registration paid in full by **March 7, 2025.**



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- **Discuss your research and collaborate with other attendees**
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