



THE UNIVERSITY OF ARIZONA

Arizona Center for Drug Discovery

WHITE PAPER

THE ARIZONA CENTER FOR DRUG DISCOVERY

Providing an integrative approach to advance academic-based drug discovery across the University of Arizona.

Charting a Path to Drug Discovery

There still remains a desperate need for effective therapeutics for many diseases. This occurs at a time when large pharmaceutical companies are decreasing their early-stage R&D efforts, providing a major opportunity for academic drug discovery to flourish. Nonetheless, the path leading to successful drug discovery and development is long and complex. Careful planning, navigation, and collaboration are keys to success. The Arizona Center for Drug Discovery (ACDD) was established to provide this type of dedicated support and guidance to researchers as they traverse the intricate world of drug discovery and development in an academic setting.

What the ACDD Can Do for You

The ACDD was created in 2018 as an initiative to provide centralized drug discovery expertise and tailored resources to guide and support translational research at the University of Arizona. The Center works with faculty members and established scientists to assemble teams around shared research projects in drug discovery and development. Faculty who become members of the ACDD receive mentorship and guidance on how to get started in the drug discovery process. Concurrently, the Center promotes pharma company-academic partnership programs to showcase the project concepts of UArizona researchers, technology platforms, and advanced models of disease. If our innovations align with the pharmaceutical partner's interests, the Center helps to facilitate building a multiyear, integrated research plan with the common objective of delivering effective medicines.

Working With the ACDD

Who can work with the ACDD?

All UArizona researchers are eligible to become Center members. ACDD is able to provide guidance and resources

regardless of the drug discovery stage you are in.

What services does the ACDD offer?

The ACDD offers a unique one-stop-shop experience where researchers at all stages of the development process can find tailored support to fit their current and future needs. ACDD resources include:

- Assistance in aligning research interests, building comprehensive research plans and proposals.
- Mentorship in the drug discovery process based on broad understanding of pharma and biotech opportunities and gaps.
- Established partnerships with university resources such as BIO5 Institute, the Arizona Cancer Center, Tech Launch Arizona, and many others.
- Guidance and support to researchers on grant and funding applications.
- Access to ACDD-specific resources including:
 - **Assay Development & Screening Core:**
The ACDD Assay Development & Screening Core includes both physical and human resources – drug discovery experts, experienced lab personnel, equipment, and new small molecule compound libraries – and works closely with the Functional Genomics Core (FGC). Within this core, we can assist UArizona faculty with development and optimization of cutting-edge cellular, biochemical and biophysical assays that are amenable for high throughput screening (HTS), building a comprehensive screening cascade, running HTS protocols, and managing data analysis and reporting.
 - **Medicinal Chemistry Core:**
The ACDD Medicinal Chemistry Core is equipped with resources to perform virtual screening, rational

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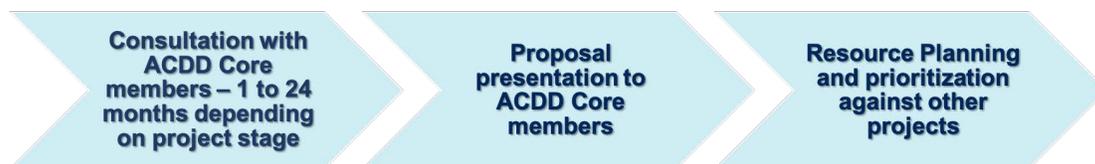
drug design and docking studies, and to develop the synthetic route for characterization and validation of hit compounds in biological assays. This core is also responsible for optimization of hit compounds towards the molecular target, and the design of chemical tools for mechanism of action studies. Additional capabilities include optimization of hit compounds to understand structure-activity relationship (SAR) and improve potency and pharmacological properties, as well as development of lead and patentable preclinical candidates, including large scale compound synthesis for in vivo and DMPK studies.

○ **DMPK and Toxicology Resources:**

The ACDD helps coordinate in-house ADMET functions (PK/PD, drug metabolism, and toxicology) to inform lead optimization and pre-clinical candidate selection. ACDD core members will provide advice on appropriate in vitro and in vivo studies that can be performed in house versus those that should be outsourced to research contract organizations (CROs). We have identified the key UArizona experts to collaborate with ACDD on these resources.

How Do You Begin?

If you think the ACDD may be the right partner for you, reach out to the ACDD directors via email at ACDD@pharmacy.arizona.edu. Co-directors, Celina Zerbinatti, PhD (Assay Development & Screening) and Wei Wang, PhD (Medicinal Chemistry), will schedule an introductory meeting with you to assess the project's stage and needs, and to identify the right support from the ACDD core team.



The overall process by which ACDD works with UArizona faculty.

The Time is Now

The ACDD bridges the gap between academic research and pharmaceutical discovery and provides researchers with an economically viable entry into early-stage drug discovery. Become a member and join those already committed to partnering with ACDD to undertake successful translational research. By becoming a member not only will you gain access to our resources, but you will join a team of like-minded researchers on a quest to disease eradication.



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