

Summer 2013 Sanofi Industry Internships

Sanofi is a diversified healthcare company focused on patients' needs. Sanofi's Tucson Research Center fulfills its mission to serve patients through early-stage discovery of new medicines and new medical technologies. Its three Discovery departments include the Combinatorial Technologies Center (merging the powers of high-throughput chemistry and biology to discover new starting points for the discovery of next generation medicines), the Early to Candidate department (exploration and preclinical development of nascent drug discovery technologies), and a newly formed Drug Safety group. Successful candidates will gain first-hand experience in a dynamic, world-class drug discovery environment.

Internship Guidelines:

- Summer internships last 12 weeks and can be arranged at three involvement levels: Level 1 at 20 hours per week, Level 2 at 30 hours per week, and Level 3 at 40 hours per week. (Involvement levels will be agreed upon by each selected student and her/his group leader prior to the start of the internship; they are binding and cannot be changed after the start of the internship.)
- Interns receive a stipend of \$2,500 - \$7,600 (depending on degree level and level of involvement), dispersed in two equal installments, through their UA Bursar's account.
- Interns must have Continuing Student status and return to the UA for the Fall 2013 semester.
- Graduate students and undergraduates with advanced research training (2+ years) will be considered based on the requirements listed in each project description.
- All candidates must demonstrate health, safety and environmental consciousness, be able to follow all health, safety and environmental regulations, standards and internal requirements.
- Ability to work well both in a team environment, and independently are essential.

To apply submit the following materials on or before C.O.B. on **March 15, 2013**:

- Cover Letter clearly indicating project (or projects) of interest and how you meet the requirements listed in the project description(s).
- Copy of your CV.
- Letter of recommendation from your primary faculty advisor (or lab PI for undergraduates), demonstrating that the advisor is supportive of the internship experience.
- An additional letter of recommendation from one other member of your advisory committee (graduate students) or person familiar with your research skills (undergraduates).

Please send/email your cover letter and CV to:

Uwe Hilgert, Ph.D.
Director Education, Outreach, Training
BIO5 Institute, University of Arizona
hilgert@email.arizona.edu

Both recommendations letters are due at or before the deadline at the address listed; recommendations sent by email have to be sent through the recommender's business email.

.Summer 2013 Sanofi Internship Project Descriptions

Chemical Array Synthesis - 2 openings

The team seeks two interns to complete the development and execute the synthesis of novel compound arrays. The targeted synthetic protocols deliver heterocyclic compounds for incorporation into Sanofi's screening collection. This collection provides the starting point for drug discovery efforts at the Tucson Research Center. Interns will be paired with mentors experienced in parallel synthesis to exploit cutting edge synthesis and automation technologies to optimize the protocols and deliver the desired arrays. Available projects span solid phase and solution phase chemistries. Ideal candidates will possess a background in organic synthesis.

Targeted Array Synthesis – 1 opening

The team seeks one intern to synthesize, purify, and characterize arrays of compounds targeting a specific receptor using established chemistry protocols. Working under the direction of the chemistry project leader, the intern will prepare arrays of compounds designed around scaffolds that are privileged for their ability to interact with the targeted receptor. State of the art automation equipment will be utilized throughout the process. The ideal candidate will possess a background in organic synthesis.

Quantitative Biochemistry – 1 opening

Study factors that affect cAMP responses through the GLP-1 receptor, a system that is critical in diabetes. Depending upon the student's skills and business needs, the student will evaluate either of the following two specific aims:

1. Evaluate the effects of Accutase® and other agents on the dose-response characteristics of GLP-1 type peptides.
2. Explore the pharmacology of competitor compounds and analogs from Novo Nordisk and Lilly in the potentiation of orthosteric agonists and other ligands.

Desired Outcomes to include:

1. Experience working in industry that should enrich the student's education & provide reference(s) for eventual employment or higher education.
2. Sufficient experimental data to support publication in a peer-reviewed journal.
3. Improve in-house understanding of the pharmacology & biochemistry of the receptor.
4. Provide foundation for other projects where Accutase® may adversely affect assay performance.

Quantitative Biochemistry – 1 opening

The research project involves computational analysis of structural information of biomolecular targets from protein data bank (PDB) and database of measured binding affinities (BindingDB).

This involves the use of molecular modeling and informatics tools to study the following:

- Identify patterns in ligands-biomolecular interactions by binding-site analysis, pharmacophore elucidation, pocket shape & feature analysis and computation of binding affinities.
- Clustering of the biomolecules based on their possible binding site interaction features with ligands and/or other proteins
- Annotation of the disease relevance of these biomolecular targets & the *in silico* drug discovery feasibilities (Build a target vs. disease vs. *in silico* feasibility knowledgebase)

Desired outcomes to include:

- Opportunity to work with state-of-the-art computational chemistry methodologies and tools that enrich the experience
- Experience in working in industry that should positively impact the student's education
- Improved understanding in the area of structure-based drug design and pattern recognition, impacting our current *in silico* drug discovery initiatives
- Opportunity to perform computational chemistry research and possible publication in a peer-reviewed journal

Summer 2013 Sanofi Internship Stipends

	Undergraduates	Graduate Students
Level 1	\$2,500	\$3,500
Level 2	\$4,000	\$5,500
Level 3	\$5,400	\$7,600