ATOM Fellowship Program FAQs

1. **What is the ATOM Consortium?**

   The Accelerating Therapeutics for Opportunities in Medicine (ATOM) Consortium, formed among GlaxoSmithKline (GSK), Lawrence Livermore National Laboratory (LLNL, for DOE), Frederick National Laboratory for Cancer Research (FNLCR, for NCI), and University of California, San Francisco (UCSF), aims to integrate the unique capabilities of high performance computing, new approaches to characterize cancer biology, and open data access to implement new computational/in silico tools and technologies, validated empirically, to impact current drug discovery paradigms. The intent of ATOM is to dramatically accelerate the discovery and development of new cancer drugs with an aspiration to move from target to first in human experimental medicine precision trials in twelve months. The success of ATOM has the potential to fundamentally transform the treatment landscape for cancer, build a modern drug discovery platform for other diseases, and create the technology and computing infrastructure to enable the precision medicine era. Further, ATOM seeks to build a new model for collaborative, cross-disciplinary team science between the public and private sectors, underpinned by a culture of precompetitive information sharing, spanning the target and preclinical areas, for the benefit of cancer patients, especially those for which there is currently no effective therapy.

2. **What is the goal of the ATOM Fellowship program?**

   With the advent of big data, multiple "-omics" technologies, and multi-scale/high content data in biomedical/cancer research, the integration and collaboration between traditional, empirical biological and clinical research and computer/data science technologies is of high demand and growing importance. However, these fields remain siloed in most academic institutions, so it is uncommon for researchers to develop skill sets that integrate these disparate areas. ATOM's unique goals of modernizing the cancer therapy discovery process through collaboration, creating new experimental protocols that generate multi-dimensional data per experiment, and linking these data in real time to advanced computational tools, approaches and technologies provide a training opportunity that is not easily achievable elsewhere.

   The goal of the ATOM Fellowship program is to provide support for biomedical early-career scientists incorporating computational technologies into their research and concurrently providing computing/data early-career scientists the opportunity to apply their skills to real-

world applications, and increase collaborations between these communities. We believe this type of trans-disciplinary exposure will help fill a significant gap in the biomedical workforce and will continue to leverage the groundwork laid by academic and other institutions that have begun to build the related programs that are needed to meet new, complex challenges in biomedical/cancer research.

3. **What type of research is supported?**

   ATOM's goal of evolving the cancer drug discovery process from an iterative, sequential make and test cycle to a network of in silico and high content experimental protocols designed by predictive simulation, deep learning, and high-performance analytics will require oncology and data science expertise, as well as technology development from a range of disciplines and domain areas. The workflow of ATOM is expected to require contributions from multiple scientific disciplines including computational technologies (e.g. supercomputing, machine/deep learning, active learning), multi-scale modeling (e.g. human pharmacokinetics, protein models, cell/tumor models), and experimental systems (e.g. advanced, ex vivo biological/organoid models). These wide-ranging domains are expected to yield a highly collaborative, trans-disciplinary research environment where scientists with diverse expertise can interact and share research, knowledge, and data.

   Fellows, under the advisement of their UCSF academic mentor, their ATOM mentor, and the ATOM Joint Research Committee (comprised of one technical lead from each member organization), will engage in research efforts focused on a specific area within a network of parallel work streams, which will be created to evaluate targets computationally and to use human-relevant in vitro/ex vivo cancer models to test and validate hypotheses, all directed by the deep system modeling capabilities afforded by LLNL's supercomputing ecosystem. It is the expectation that Fellows with primarily data science or computational backgrounds will participate in research and gain experience regarding empirical or wet-lab research design, methods, applications, etc., and Fellows with more traditional drug discovery, oncology, pharmacology backgrounds will do the same regarding computational and in silico methods, tools, and models. It is also expected that Fellows will gain knowledge and exposure regarding regulatory policies and approvals as well as investigational new drug (eIND) applications.

4. **Who is the ideal candidate for the ATOM Fellowship?**

   An ideal candidate is a postdoctoral scholar with:

   - *A strong background in any of the following:*
     - *Computational Biology*
     - *Pharmaceutical Chemistry*
     - *High Performance Computing*
     - *Drug Discovery*
     - *Cancer Biology*
   - *An interest in a career in:*
     - *Pharmaceutical industry*
     - *Biotechnology*
     - *Government-led research (e.g. NIH, DOE, the National Labs)*

- *An interest in team science across scientific disciplines and building a skill set outside of their primary discipline*
- *An existing or planned research relationship with a USCF Faculty member interested in ATOM*
- *Support from their UCSF academic research advisor to participate in ATOM*
- *Flexibility to start the Fellowship upon completion of security clearance (approximately 2nd quarter of 2018)*

5. How many Fellowships are available?

FNLCR has funding support for two full-time Fellows, starting in 2018. Additional ATOM Fellowship funding may be available through UCSF (TBD).

6. How long is the Fellowship program?

One calendar year with the potential opportunity to renew the appointment for a second year.

7. I'm not able to apply this year, when is the next application cycle?

Currently, there are no plans for additional application cycles.

8. What groups are sponsoring the Fellowship?

The National Cancer Institute (NCI) is providing funding support for this Fellowship program through the Frederick National Lab for Cancer Research (FNLCR). Due to the structure of the ATOM Collaborative Research and Development Agreement (CRADA), Fellows will be appointed as postdoctoral employees of Leidos Biomedical Research (LBR, the company that operates Frederick National Lab). FNLCR is working closely with UCSF to bring early-career scientists who are currently UCSF postdocs (or have recently ended postdoctoral work at UCSF) into the Fellowship program. Recent Ph.D. graduates with the relevant experience and background will also be considered. Applicants will be expected to identify or already be working with a UCSF faculty advisor in an area of interest to the ATOM Consortium. The Fellowship will be based in San Francisco at the ATOM facilities at 499 Illinois Ave, adjacent to UCSF's Mission Bay campus.

9. How will applications be evaluated?

FNLCR and NCI will convene a Fellowship Review Committee, and applications will also be evaluated by the ATOM Joint Research Committee (JRC). The selection process will include evaluation of criteria related to those described in FAQ #4.

10. What are the IP and publication policies of the ATOM Consortium?

The ATOM CRADA contains specific policies regarding intellectual property and the publication of research results. The complete CRADA can be made available to UCSF participants in ATOM. In general, it is understood that publishing research results is essential for academic success and publication is encouraged, within the guidelines of the ATOM publication policy.

11. **What is the role of the USCF mentor/faculty advisor? Do I have to have an advisor chosen before I apply?**

   Applicants are required to be mentored, in part, by a UCSF faculty member in order to provide sufficient scientific/technical advisement for the Fellow's research project, create a strong connection with current UCSF research priorities, and provide the opportunity for increased collaboration, including publications, among the UCSF faculty advisor, the ATOM Fellow, the ATOM mentor and ATOM scientists from other member organizations. Applicants will be required to identify a UCSF mentor, who will need to provide a letter of support, in their application package. The ATOM mentor can be identified shortly after Fellowships officially begin.

12. **How is a postdoc employee of Frederick National Lab for Cancer Research compensated?**

   As an employee of Leidos Biomedical Research, the Fellow will receive a salary, not a stipend.

   The LBR postdoc employee will receive the standard benefits package that includes:

   - *Company-subsidized medical. dental, vision and basic life insurance*
   - *10 paid holidays*
   - *vacation accruals up to 13 days a year*
   - *sick leave accruals up to 10 days per year*

   The Fellowship also includes:

   - *Travel, equipment and research support*
   - *Cubicle space at 499 Illinois Ave, adjacent to UCSF's Mission Bay campus*

13. **What are the eligibility requirements?**

   - *Ph.D. in an appropriate discipline*
   - *Current or past UCSF postdoc or staff scientist*
   - *Ability to end UCSF employment in Q2 2018*
   - *Support from a UCSF faculty advisor*
   - *U. S. Citizenship or permanent resident status (green card)*
   - *Ability to obtain public trust security clearance is a requirement to receive the Fellowship*

14. **What is the application process time frame? When will Fellowship recipients be notified?**

Application Available	Application Submission Deadline	Selections Made	Potential Start Date	Notes
October 30, 2017	December 4, 2017	January 2018	Spring of 2018	Start date depends on obtaining security clearance.

15. **What is included in the Fellowship application?**

- *Statement of research interests, explaining alignment with ATOM research objectives (~1-2 pages)*
- *CV*
- *Letter of support from a UCSF faculty advisor*

16. **What are requirements of the Fellowship?**

- *Presentation of research within the ATOM team*
- *Participation in relevant ATOM scientific/technical meetings, workshops, etc.*
- *Presentation/poster at a scientific conference*
- *Joint publication with UCSF faculty advisor and ATOM mentor*

17. **Where will the ATOM Fellowship Program be located?**

ATOM Fellows will work the majority of the time at the ATOM facility, located at 499 Illinois Ave., San Francisco, adjacent to UCSF's Mission Bay campus.

18. **Will Fellows have access to UCSF resources?**

Fellows will be given UCSF affiliate status. The Fellow will be expected to devote the majority of their time to an ATOM-specific project (defined under the CRADA). However, the Fellow and their UCSF faculty advisor will have the opportunity to create a plan for continued interaction with the academic laboratory, which may include attending lab meetings, attending/presenting at department seminars, performing research related to their faculty advisor's laboratory, etc. The plan will require ATOM Governing Board approval and will be subject to ATOM Intellectual Property and publication policies.

19. **How can I find out additional information?**

Interested individuals are encouraged to direct questions about the program and research opportunities with the ATOM Consortium to Deb Hope, ATOM Program Manager, FNLCR, at deb.hope@fnlcr.nih.gov*. Please use include ATOM Fellowship in the subject line of the email.*