

# Are you a *Drosophila* geneticist who is passionate about sustainability? Do you want to optimize the world's first *Drosophila*-based expression platform and change the future of food?

## About the role

The **Senior Scientist - Genetics** exists to optimize our EntoEngine platform and ultimately create the highest quality recombinant proteins available on the market today. Your activities will range from developing new genetics strategies to consistently express novel recombinant proteins in *Drosophila melanogaster*, to maintaining existing stocks and supporting the fly rearing team for industrial level insect farming.

The **Senior Scientist - Genetics** will work collaboratively with the R&D unit of our business under the leadership of the Genetics Lead, Pratima, and VP of R&D, Avi. They will work intimately with our Protein Purification and Engineering Teams and provide support and mentorship to junior scientists. This role will attend weekly science and all-hands meetings and participate in collaborative discussions on Future Fields' R&D and production strategy and business goals.

**This role will own** the optimization of our genetic systems for maximal growth factor and recombinant protein expression in *Drosophila*. They will provide mentorship and supervision to junior team members, and support the Genetics Lead in using cutting edge tools to genetically manipulate *Drosophila* and troubleshooting where necessary. The products of EntoEngine are part of our long-term strategy and can be found within our product roadmap. They will also work with our Protein Purification team to develop the broader production process with each particular recombinant protein product. Specific responsibilities include:

- Molecular cloning of target genes into transposon vectors - primer design, PCR, restriction enzyme cloning, plasmid DNA purification, and DNA analysis
- Investigating and designing novel methods of gene expression within the *Drosophila* system - designing new plasmids and features for enhanced expression of transgenes
- General fly husbandry - tending to transgenic strains and maintaining existing stocks
- Setting up genetic crosses - planning and designing mating schemes to express transgenes, balancing transgenic strains to prevent expression loss, investigating new transgenic crosses for enhanced expression
- General experimental design and troubleshooting
- Incorporating CRISPR and site specific genomic integration strategies for new products

### **This role will assist by:**

- Supporting the Genetics Lead and VP of R&D with new product strategy and development
- Supporting our Protein Purification team in developing protocols for expression testing and upstream protein purification processes

- Helping other members of the genetics team with general fly husbandry and stock maintenance
- Advising our regulatory team as needed and providing information, including written reports, to meet reporting requirements and help us reach critical regulatory milestones
- Participating in the recruiting and hiring process as the genetics team grows

**This role requires** an advanced degree (PhD or MSc) in genetics or a related field; extensive experience with the *Drosophila melanogaster* model organism and the associated genetic tools; the ability to manage a team and multiple projects; a positive attitude and passion for sustainability and creating impact through growing a startup; and an innovative mindset with a passion for solving hard problems. We are a startup and value a hunger for learning and improvement, balanced with the need to produce results.

## About you

You are a problem-loving scientist with a passion for *Drosophila* and their immense benefits as a model organism. You live and breathe genetics and have a deep understanding of the nuances of the *Drosophila* system. You are detail-oriented and can manage multiple projects simultaneously with diligent note taking. You're a strong team player and enjoy collaborating on a scientific level with other individuals with diverse skill sets and backgrounds. You like to support and provide mentorship, but still enjoy getting your hands dirty in the lab with your own experiments. You're a strong communicator with a proclivity for explaining difficult scientific concepts to laypeople and other scientists. You have a passion for sustainability and want to have a positive impact on the world with your unique skill set.

### Must haves

- PhD or MSc with 4+ years experience in Genetics or a related field
- Extensive experience with *Drosophila melanogaster* as a model organism and its associated genetic tools
- Supervisory experience of other junior scientists
- Strong collaboration and interpersonal skills

### Bonus points

- Previous experience with recombinant protein expression
- Experience with population genetics
- Previous experience with GMP production

## Your future (with Future Fields)

- Within 1 month, you develop a comprehensive understanding of EntoEngine capabilities and optimize the existing genetic strategies and boost expression of key growth factors and recombinant proteins within our *Drosophila* expression system. You will also develop a plan to effectively balance existing stocks to prevent decline in expression levels.
- Within 3 months, you will begin to implement new plans developed under the supervision of the Lead and VP for new or existing targets, having cloned relevant features or sites into new vectors for transgenesis. You will also have balanced existing stocks for long-term expression of production stocks.

- Within 6 months, you will have the new transgenic strains built with initial expression tests completed. You will have begun to iterate and troubleshoot the new expression system to ensure optimal results.
- Within 1 year, you have developed a robust system for enhanced expression of recombinant proteins, fully implemented into our production system with at least 1 product with new products initiated in the process. You will have worked with the Engineering team to have integrated newly developed strains into the production process.

**If you are interested in learning more about this role or applying, please reach out to:**

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