FABIEN PLISSON

https://www.linkedin.com/in/fabienplisson/
https://github.com/plissonf

COMPETENCIES

- Extensive experience in collaborative drug discovery campaigns in academic-industry partnerships.
- Familiarity with data science libraries such as Pandas, Sklearn, PyTorch, and Tensorflow Keras.
- Long-time advocate of advanced statistics, bioinformatics and artificial intelligence.
- Experience in implementing predictive and generative models, including language models.
- Routine use of molecular simulation software, data visualization techniques such as PyMOL.
- International experience in R&D project management and professional-level trilinguist (FR, EN, ES).

EXPERIENCE

Group Leader, *Centre for Research and Advanced Studies* (CINVESTAV)   Irapuato, Mexico
11.2017-present
  ▷ Nurturing a research laboratory combining wet and lab facilities to advance peptide therapeutics.

- Developed machine learning / deep learning models including NLP to support protein discovery.
- Implemented bioinformatics pipelines to design novel proteins using High-Performance Computing.
- Produced peptide candidates through peptide synthesis and biological expression systems.
- Applied to MXN 16M in grant funding and prizes, received and administrating ~35 %.
- Published 25 articles: 9 as (co-)first author, 10 as senior/corresponding author
- Supervised directly 13 students (4 BSc, 7 MSc, 2 PhD) and 6 students from other research groups.
- Taught courses in biochemistry, structural bioinformatics and chemoinformatics (40 h/year).
- Presented 50+ seminars and 20+ posters at national institutions and international conferences.

Health Data Scientist Fellow, *Insight Data*   Boston, USA
09.2016-02.2017
  ▷ Drawing insightful analytics and creating a digital tool to predict adverse events after immunisation.

- Curated 450,000 medical reports from the US surveillance program VAERS.
- Analysed, pre-processed and built machine learning models using R and Python programming.
- Built the online web application Reac2Vac.online using SQL, Flask / Bootstrap.
- Run the API with the cloud platform Amazon Web Services (AWS).

Research Officer, *The University of Queensland*   Brisbane, Australia
09.2012-09.2015
  ▷ Designing novel peptide ligands for type 2 diabetes and acute myeloid leukemia.
  ▷ Sharing research advances with industry partners (*Protagonist Therapeutics* and *Pfizer*).

- Designed potent peptide GLP1-R agonists similar to the FDA-approved drug Exenatide (Byetta).
- Studied conformational changes in 576 peptides using Schrodinger Maestro and R/R Studio.
- Presented research progress to collaborators every 2-4 weeks online and produced reports.

PhD Candidate, *UQ Institute for Molecular Bioscience*   Brisbane, Australia
08.2008-08.2012
   ▷ Discovering novel kinase inhibitors against neurogenerative disorders with biotech *Noscira*, Spain.

- Elucidated NMR chemical structures from tiny amounts of 50+ marine extracts using HPLC-MS
- Applied *in silico* techniques to accelerate the discovery of novel kinase inhibitors (EP2662081A1).
- Developed the first predictive ML model for blood-brain permeability applied to natural products.

Intern and Research Engineer, *Laboratoires PIERRE FABRE and CNRS*   Toulouse, France
03.2007-05.2008
   ▷ Hit/Lead optimisation of natural products with anticancer activity (proteasome inhibitors)

- Synthesized of 100+ new synthetic analogues from bioactive natural products (<5-10mg).
- Improved the synthetic process to 6 steps, reducing the experimental load to 40%.
- Introduced esterases to reach key intermediate for synthetic library and scale-up
- Patent co-inventor (FR2941697A1).

EDUCATION

2012 **Ph.D. Organic Chemistry**, The University of Queensland (UQ) – Australia
2007 **Chemical Engineer (Master level)**, ENSCM, Grande École – Montpellier, France
2007 **Master 2 Biomolecular Engineering**, ENSCM – Montpellier, France
2005 **Master 1 Chemistry**, The University of Aix-Marseille 2 – Marseille, France
2004 **B.Sc. (3rd year) Chemistry**, The University of Aix-Marseille 2 – Marseille, France
2003 **DEUG (2-year B.Sc.) Life Science (top 5)**, The University of Toulon, France

CONTINUOUS LEARNING

2023 How Diffusion Models Work (OpenAI & deeplearning.ai)
2023 ChatGPT Prompt Engineering for Developers (OpenAI & deeplearning.ai)
2022 Deep Learning for Molecules and Materials (A.D. White, dmol.pub)
2022 STAT 453: Introduction to Deep Learning (S. Raschka, sebastianraschka.com)
2021 MIT 6.S191: Introduction to Deep Learning (introtodeeplearning.com)
2020 Sequence models (Deep Learning Specialization) (A. Ng, deeplearning.ai)
2019 Neural Networks and Deep Learning (A. Ng, deeplearning.ai)
2017 Data Visualization and D3.js – Udacity
2017 Inclusive Leadership – Catalyst

RESEARCH CONTRIBUTIONS

ORCID: https://orcid.org/0000-0003-2246-9347
- 70+ oral presentations in seminars, workshops, national and international conferences
- 25 articles: 9 as (co-)first author, 10 as senior/corresponding author
- 15+ posters in virtual, national and international symposia since 2010
- 3 reviews in *Chemical Science, ChemBioChem* and *Journal of Chemoinformatics*
- 1 patent FR 2941697 A1 20100806 2010

LANGUAGES

French – *****   English (IELTS 2007) – ****   Spanish (Level A2 2015) – ***

WORKSHOPS

2023	Invited speaker. BIRS Workshop *Computational Biology meets Data Science*. https://www.birs.ca/events/2023/5-day-workshops/23w5152, Oaxaca City
2022	Invited speaker. *Machine learning applications to proteins and drugs*. Summer School at RIIAA: Meeting on Artificial Intelligence and its Applications (30/09/2022)
2021	Invited speaker and CIRCOS organizer. *Design Proteins with Artificial Intelligence*. RIIAA: Meeting on Artificial Intelligence and its Applications (27/09/2021, virtual).
2019	Invited speaker and organizer, CINVESTAV Advanced Genomics Unit LANGEBIO CABANA workshop *Chemoinformatics in Drug Discovery* (15-18/10/2019, Mexico).
2019	Invited speaker, Universidad de Antioquia, CABANA *Latin American workshop in Structural Bioinformatics of Proteins* (23-27/09/2019, Medellin, Colombia).

SCIENTIFIC COMMUNICATION

11/2022	Podcast *Exploration Science*, http://ow.ly/3uw550LwT4J (English)
08/2022	Magazine *Avance & Perspectiva (CINVESTAV),* https://shorturl.at/qPUX6 (Spanish)
10/2021	RIIAA CIRCOS, https://youtu.be/xSPF_q5erms (Spanish)
09/2021	The Data Pub, https://www.youtube.com/watch?v=sgO_dmmYvFY (Spanish)

SCHOLARSHIPS, FELLOWSHIPS & AWARDS

Roche & *Mexican Health Foundation* Rosenkranz Medical Research Award (2021)
CONACYT Fellowship (2017-2022)
IMB and EuroQSAR Travel Scholarship (2014)
IMB Research Ph.D. Scholarship (2008-2012)
UQ International Tuition Research Award (2008-2012)
UQ Graduate School Scholarship (2010)
European LEONARDO Research Scholarship (2006)

TECHNICAL SKILLS

Data Science: Basic and Advanced Statistics, Machine Learning & Deep Learning (R, Python – ScikitLearn, TensorFlow Keras and PyTorch), Dimensionality reduction, Web scraping, Familiarities with SQL, HTML, CSS, and JSON programming, Cloud-based resources (Google Colab, Hugging Face, AWS).

Technical skills: Spectroscopy (NMR, CD, UV, IR), Mass spectrometry (EI, ESI, MALDI-TOF), Chromatography (RP-HPLC, UPLC), Liquid-liquid extraction, Solid-phase peptide synthesis, Gel electrophoresis, Chemoinformatics (RDKit, PyMOL, Schrodinger), Enzymatic bioconversions.

Digital literacy: Presentation (Word, Excel, PowerPoint, Keynote), Visualization (Adobe Illustrator, Inkscape), Reference management (Zotero, Mendeley, Endnote), Interactive Dashboards (RShiny, Plotly, D3.js), Online conferencing (Zoom, Teams, Google Meet).

Professionalism: Cross-functional team leadership, Supervision Project planning & management, Interdisciplinary collaboration, Problem-solving, Videoconferencing, Office administration, Budget handling, Grant writing, University teaching, Peer-reviewing.