Elan Ness-Cohn, Ph.D.

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Summary

- **Complex thinker:** Nimble learner with a diverse repertoire of expertise – *e.g.,* math & science literacy, wet & dry lab experience, and educational & business pragmatism – motivated by solving multifaceted problems
- **Empathetic collaborator:** Intuitive, team-oriented leader – versed in bridging interdisciplinary & interpersonal communication gaps – with track record of driving high impact scientific discovery
- **Relentlessly curious:** Meticulous, strategically-minded analyst – armed with a breadth/depth of data science skills – adept at executing deep diligence & clearly communicating results to wide audiences

Experience

Entrepreneurial Fellow – Chicago Biomedical Consortium (CBC) – Chicago, IL 2022–present

▶ ***Led assessments to identify most promising early-stage therapeutic technologies:***

- Part of four-Fellow cohort that over a year, assessed 21+ letters of intent (LOI), yielding 6+ full scale assessments and 2 awards ($250K); led 7+ LOI & 1 full assessment; supported 11+ LOI & 5 full assessments
  - *LOI:* over stringent 3-week process developed case to (de-)prioritize projects; communicated results to academic/pharma/VC review boards (*e.g.,* ML-based drug tox screening of iPSC organoids – *deprioritized*)
  - *Full Scale:* through rigorous 10-week process developed technology positioning for microbial consortia platform in the context of current, financed, microbiome landscape; articulated investment thesis based on positioning, potential indications, financing risk, and go/no-go experiment to 30+ pharma & VC partners

▶ ***Managed peers, faculty, and industry partnerships to advance translational research:***

- Managing 2+ CBC funded projects; advising on experimental plans; establishing timelines & budgets; coordinating scientist & contractors to hit milestones (*e.g.,* pre-IND data package of myeloid cancer therapeutic)
- Strategically advising 3+ academic labs on translational of early-stage research; guiding faculty in strategic positioning of assets; informing experimental plan based on key experimental benchmarks/regulatory milestones

▶ ***Created business development infrastructure:***

- Built and analyzed Chicago faculty database of 160+ members and 20+ success metrics; identified and contacted promising faculty to fill award pipeline; designed an OpenAI NLP-based automation for future pipeline searches

New Product Planning Extern – Evozyne – Chicago, IL 06/2023–present

▶ ***Building commercial case for new drug product pipeline:***

- Bolstering new product planning strategy using data-driven insights; assessed commercial viability, forecasted revenue, positioned drugs, and cultivated stakeholder engagement with tailored KOL discussion guides

Business Development Extern – Rhaeos, Inc – Chicago, IL 01/2023–04/2023

▶ ***Shaped growth strategy for global deployment of core technology:***

- Devised prioritization strategy for deployment of Rhaeos's FlowSense technology in low & middle income countries; built statistical models to estimate market size & designed qualitative research materials

Life Science Analyst Extern – Back Bay Life Science Advisors – Boston, MA 11/2022–05/2023

▶ ***Developed industry white paper:***

- Distilled landscape analysis of deal flow in women's health space into an industry white paper to support firm marketing and inform consultancy's client recommendations for perspective partnerships/investments

Ph.D. Candidate – Braun Lab, Northwestern University – Evanston, IL 2017–2022

▶ ***Spearheaded multi-disciplinary research collaborations:***

- Led 5 collaborative projects leveraging expertise in circadian biology and applied math; resulted in 3 oral podia, 7 posters at US & international conferences, and 3+ first author publications (e.g. *Science* and *Bioinformatics*)

▶ ***Designed and taught biology, math, and programming courses:***

- Designed an *Intro to Data Science Lab Course* and taught 5 grad and 2+ undergrad level courses in Cell Biology, Bioinformatics, Biostatistics, and Data Science; resulted in procurement of graduate level teaching certificate

- ***Managed research team:***
  - Mentored 11+ graduate and 2 undergraduate students in various computational research and data management techniques; led to the development of 1 software package and accompanying manuscript
- ***Developed software:***
  - Developed a suite of 3 open-source software packages for optimizing the design and analysis of *omic time-series experiments for chronotherapeutic application with over 9K+ downloads and ∼30hours/month usage

Education

Northwestern University – Ph.D. (Biomedical Research) – *Evanston, IL* 2022

MIT – B.Sc. (Biology), Concentration (Education) – *Cambridge, MA* 2017
- **Honors:** Senior Thesis - Boit Prize for Engineering Writing
- **Jaenisch Lab:** *Engineering Human Pluripotent Stem Cells With Insulin Reporter to Model Type 1 Diabetes*
- **Kim Lab:** *Regulation of Stress Physiology & Longevity by the EIF3 Complex in C. Elegans*

MIT – Data Science and Machine Learning: Making Data-Driven Decisions – *Professional Certificate* 2023

Computational & Technical Skills

Programming: R • Python • Bash • R Shiny • LaTeX• git • SQL • HPC (SLURM)
Machine Leaning: Tidymodels • Keras • Tensorflow
Data Mining: statistical analysis • dimensionality reduction • clustering • visualization
Modeling: dynamical systems • topological analysis • toy model development
Research: algorithm & pipeline development • inter-disciplinary collaboration • software development
Laboratory: CRISPR/Cas-9 genome editing • plasmid design • molecular cloning • qPCR
Market Intelligence: primary market research (*e.g.* KOL/Physician interviewing)
secondary data analysis (*e.g.* GlobalData, BioCentury, Pitchbook, Biomedtracker, *etc.*)
Languages: English • Hebrew

Software (Highlights)

Fasano-Franceschini Test – **R Package**
An open-source implementation of the Fasano and Franceschini test – a 2-D Kolmogorov-Smirnov (KS) two-sample test

TimeCycle – **R Package**
A non-parametric method that leverages results from dynamical systems theory and algebraic topology to test whether a dynamical variable (gene expression) exhibits cycling dynamics – Video Tutorial

TimeTrial – R Shiny Web Application: Synthetic, Biological
An interactive software suite that enables circadian researchers to perform head-to-head comparisons of four leading cycle detection methods using both synthetic and biological data – Video Tutorial

Additional work can be found on my GitHub profile: github/nesscoder

Select Publications

[1] **Ness-Cohn, Elan** and Rosemary Braun. TimeCycle: Topology Inspired MEthod for the Detection of Cycling Transcripts in Circadian Time-Series Data. *Bioinformatics*, 2021.

[2] **Ness-Cohn, Elan**, Ravi Allada, and Rosemary Braun. Comment on "Circadian rhythms in the absence of the clock gene Bmal1". *Science*, 372(6539), 2021.

[3] **Ness-Cohn, Elan**, Marta Iwanaszko, William L Kath, Ravi Allada, and Rosemary Braun. TimeTrial: An interactive application for optimizing the design and analysis of transcriptomic times-series data in circadian biology research. *J Biol Rhythms*, 35:439–451, 2020.

Additional work can be found on my Google Scholar profile: googleScholar/Ness-Cohn