AstraZeneca

From Coders to Drug Developers: The Expanding Role of Statisticians in the Age of AI

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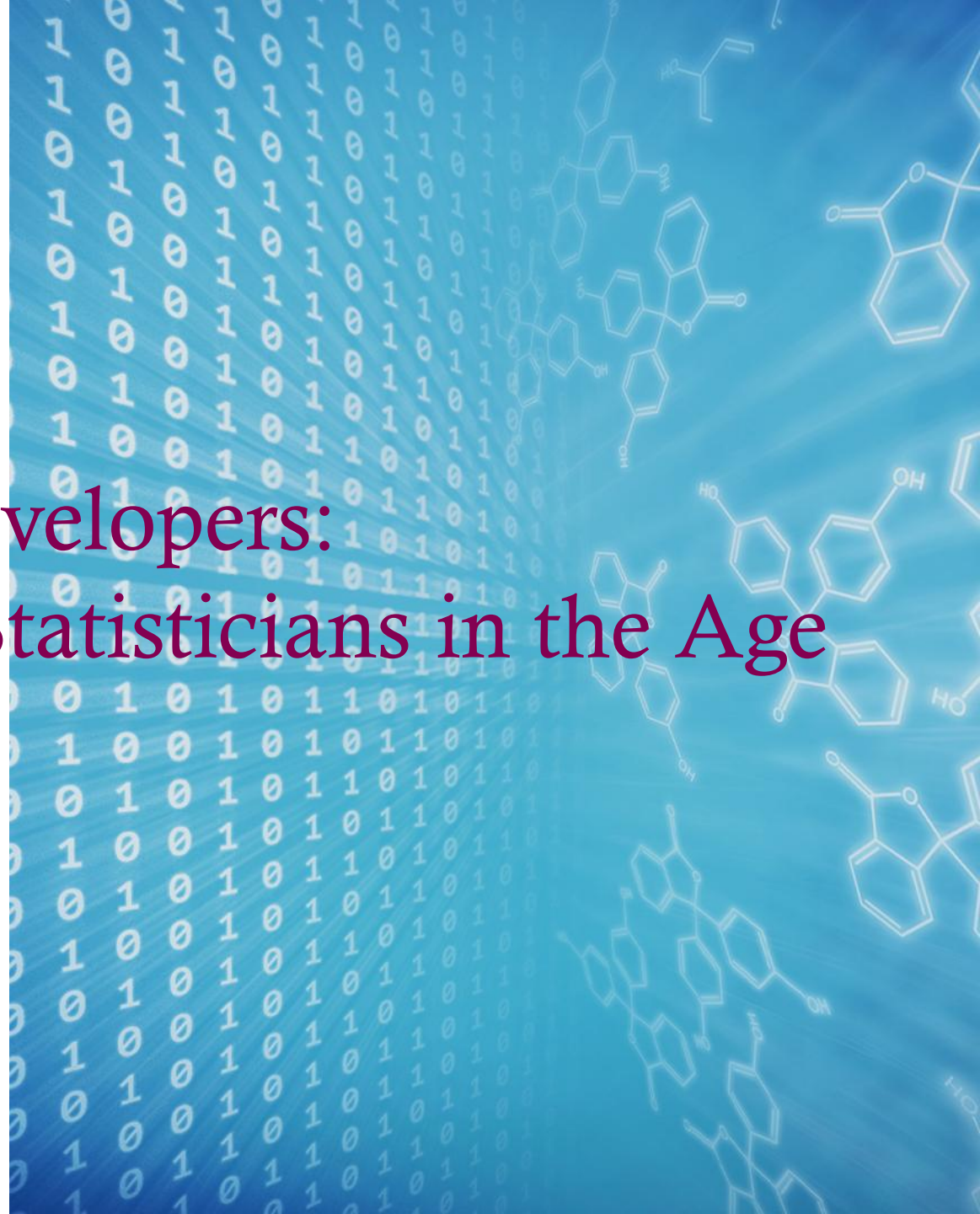


This is me

Leadership and Expertise

Leading a specialized team in statistics focusing on Early Phase respiratory and immunology clinical trials.

Academic Background

I hold an engineering physics degree and a PhD in mathematical statistics with expertise in stochastic modeling. Post Doctoral research in Pharmacokinetic-Pharmacodynamic modeling.

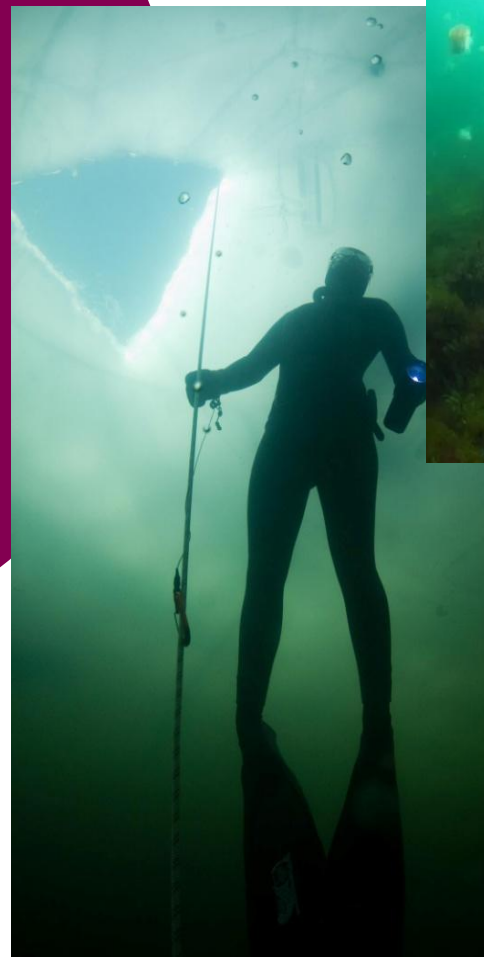
Clinical Development Support

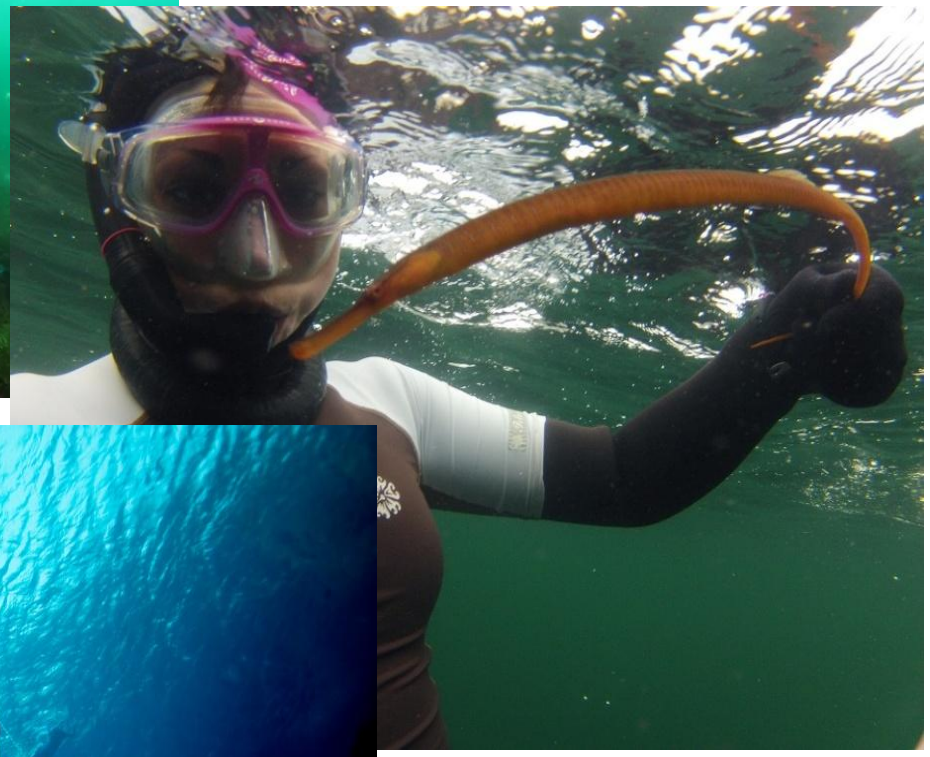
My team supports early clinical development stages, including first-in-human to dose-finding Phase 2 studies.

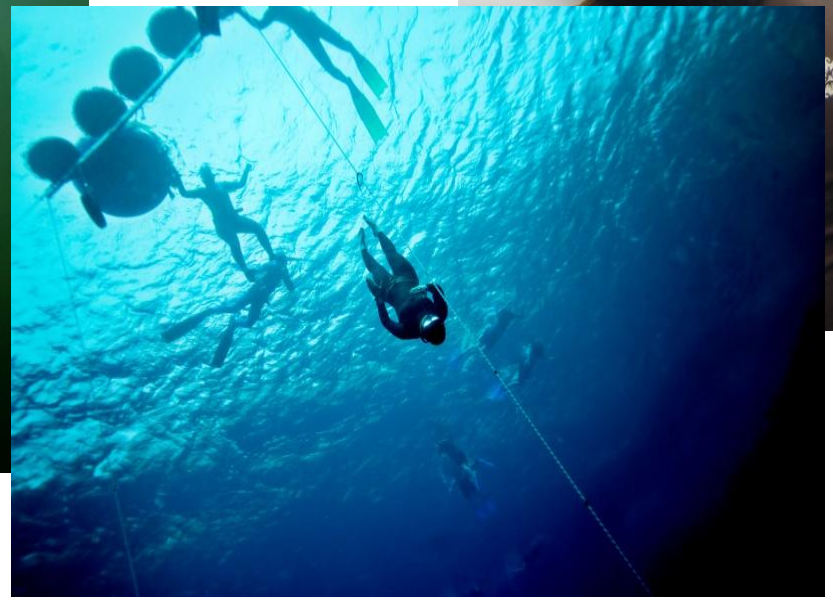
Empowering Decision Scientists

I am passionate about empowering statisticians and advanced analysts to take on strategic roles in drug development.

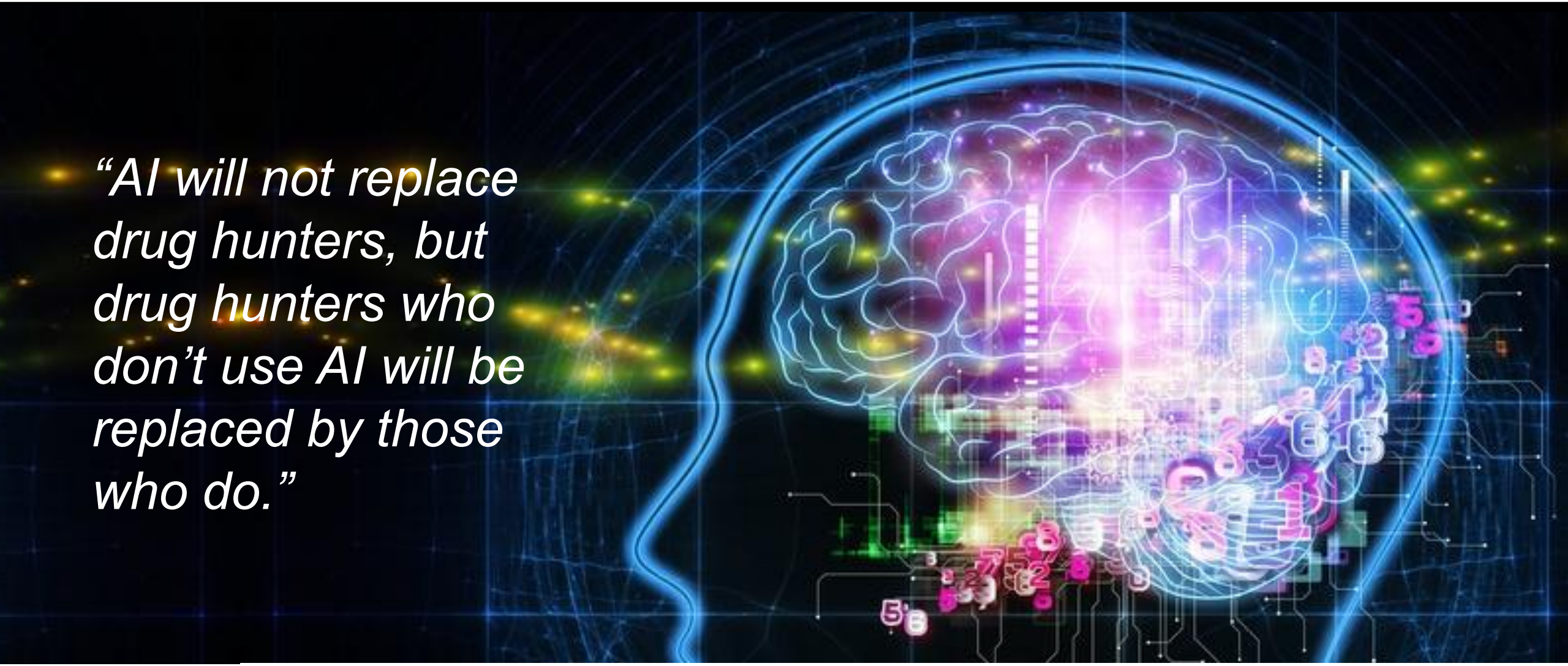
This is also me!







Why now is the prime time for AI in healthcare



The Clinical Biostatistician at AstraZeneca

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Statisticians as Drug Developers

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We are shaping the future of drug development!

Strategic Leadership Role
Statisticians have and will continue to transition from support to strategic leaders driving clinical development decisions.

Influencing Trial Design
They shape trial designs to optimize data quality and regulatory compliance throughout development.

Data-Driven Decision Making
Quantitative thinking ensures that data insights guide critical choices in drug development phases.

Driving Innovation Impact
Statisticians lead innovation across therapeutic areas to deliver meaningful impact.

AI Governance & Risk Assessment
“AI is cool- But is it safe?”

Robust AI Governance Framework

- A comprehensive AI governance framework at AZ ensures ethical use and regulatory compliance in AI deployments.

AI Risk Assessment

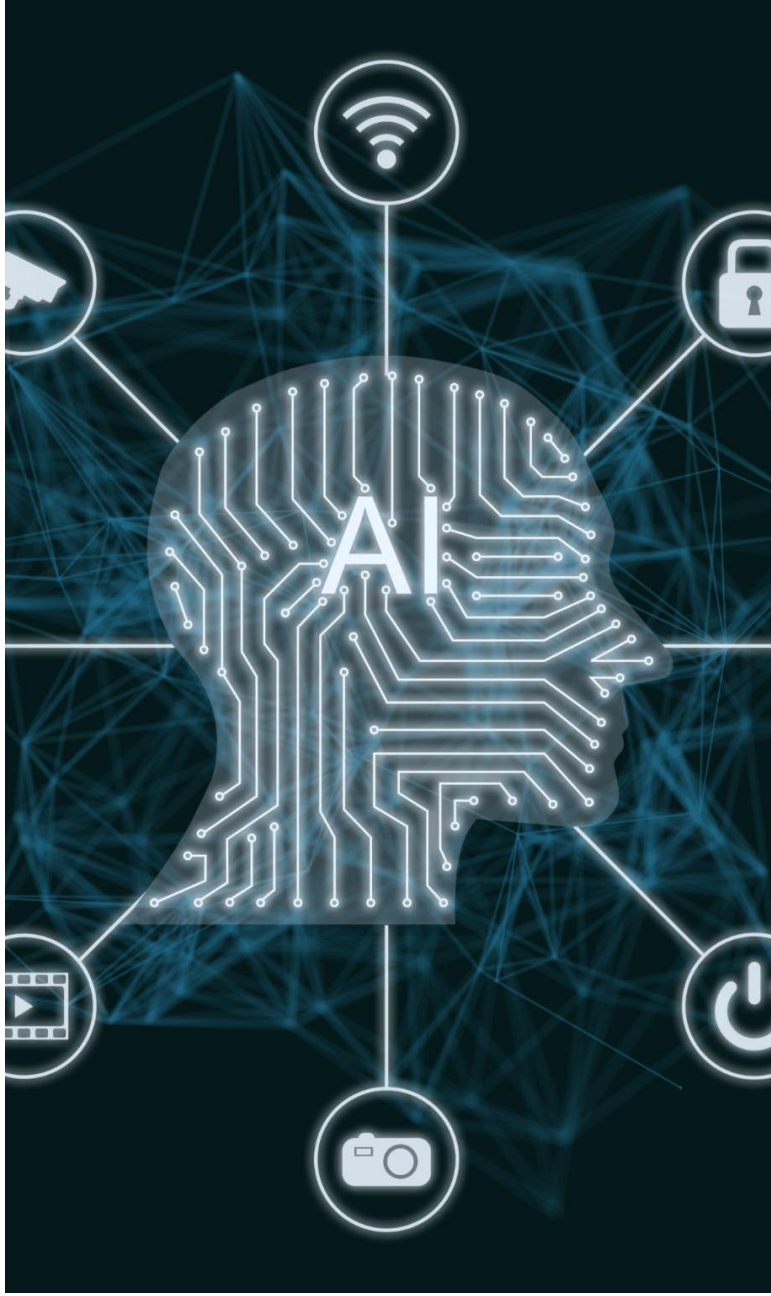
- All AI solutions undergo risk assessment to mitigate ethical and regulatory risks before deployment.

Role of Statisticians

- Statisticians are Data Stewards! We understand how to drive quality and assurance!

Building Trust and Collaboration

- The governance framework fosters trust and teamwork among stakeholders for responsible AI innovation.



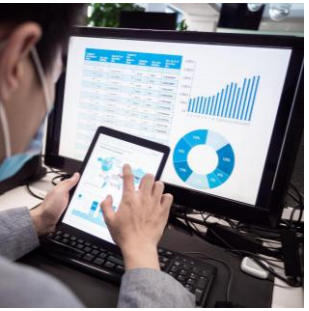
Biometrics + Automation= ♥
"What if protocols and study reports built themselves?"

Automation in Clinical Authoring and Reporting

Automation tools like AZSOL and MOSAIC Biometrics streamline the generation of Tables, Listings, and Figures for clinical reports.

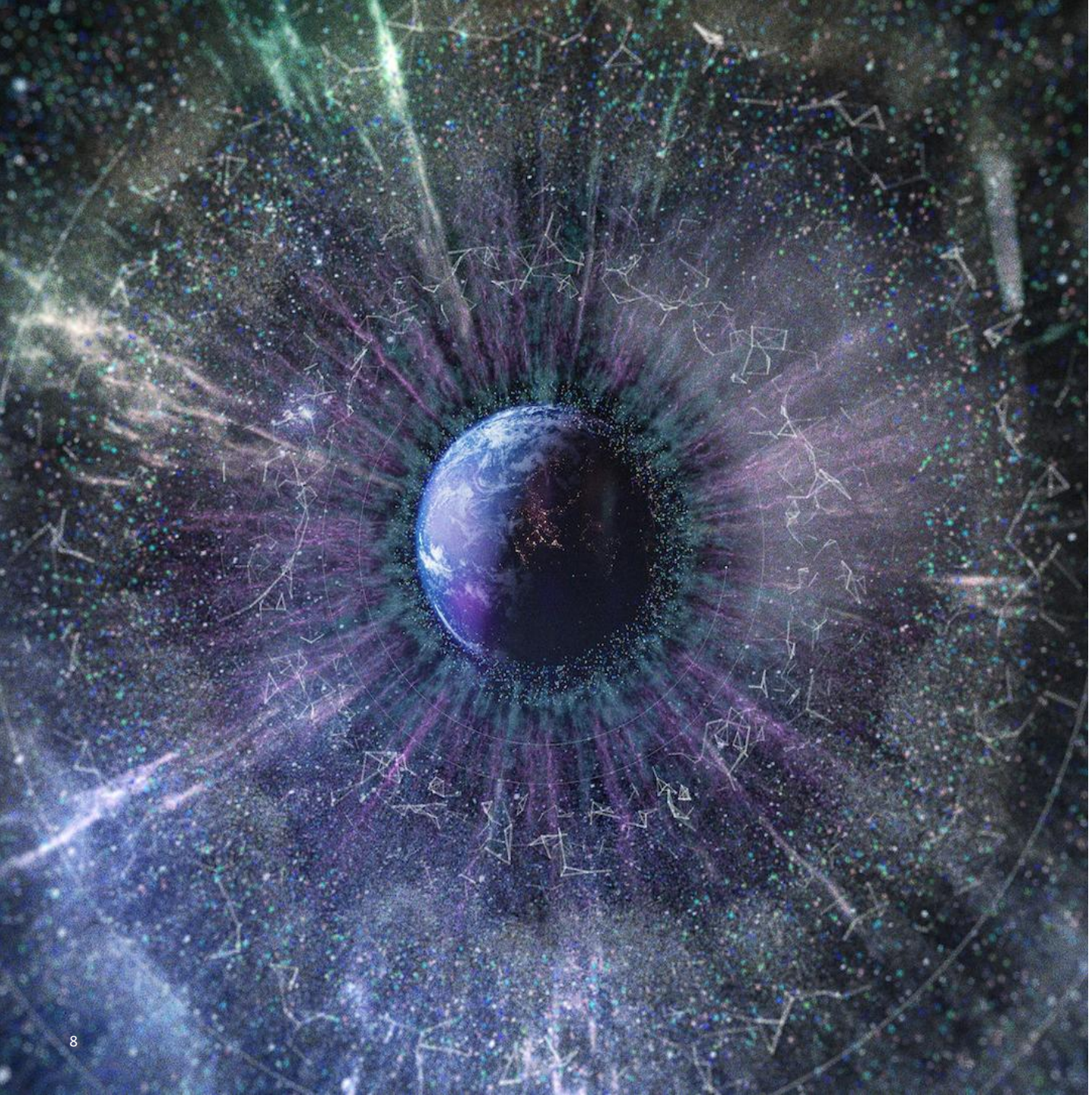
Metadata-Driven Processes

Using metadata-driven methods to create mock shells and SAS code reduces programming time and ensures consistency in outputs.



Empowering Statisticians, Advanced analysts and Programmers

Automation shifts focus from formatting to scientific analysis, positioning statisticians as architects of innovative workflows.



Our Modern Toolbox

Integration of AI and Statistics

Combining traditional statistics with AI and automation enables smarter clinical trial design, automation and patient outcome predictions.

Advanced Analytical Tools

Tools like Decision Science, Predictive Modeling, statistical/machine learning, and Bayesian frameworks optimize treatment strategies effectively. We now have the computational power to realise!

Strategic Impact on Medicine

The toolbox accelerates development timelines and fosters innovation, enhancing the precision of drug development in our key therapy areas.

🧠 *Statisticians leading smarter, faster trial design!*

R&D – Smarter, More Precise, Faster

Access, Training and Capabilities

Capability Building
- Thriving in the Age of AI
- Internal role-based training

Drive efficiency and productivity
- Utilise AI every day (AZ ChatGPT, Notebook LM, MS Co-Pilot, Research assistant)

Make space
- Replace 2hrs of meetings per week to upskilling in desktop AI replacing 3 manual tasks with AI enabled tasks by year end

Continue to input / explore new opportunities
- Share best practice and utilise best practice

Delivery of R&D Targets

Discovery - Automated chemistry, AI histology efficacy readouts, organoids and advanced cell systems for pharmacology/efficacy

Safety –Digital twins for patient selection and scenario exploration

Enhanced trials – AI E2E Clinical Pharmacology, Foundation Models trained on internal and external information for trial strategy

Enhanced protocols – Trial matching, Digital twins, synthetic data, AI-assisted authoring of CSP and CSR

Enhanced submissions – Accelerate HAQs, authoring regulatory reporting, and regulatory strategy development

Additional data sources – to augment / enhance capabilities

FAIR data – migrating from bespoke data systems enabling reproducibility at scale

Why this moment matters!

Extraordinary pipelines fail without extraordinary evidence.

- Accelerate study start-up
- Shorten timelines
- Reduce rework
- Increase predictive confidence
- Strengthen regulatory credibility
- Industrialise analytical workflows

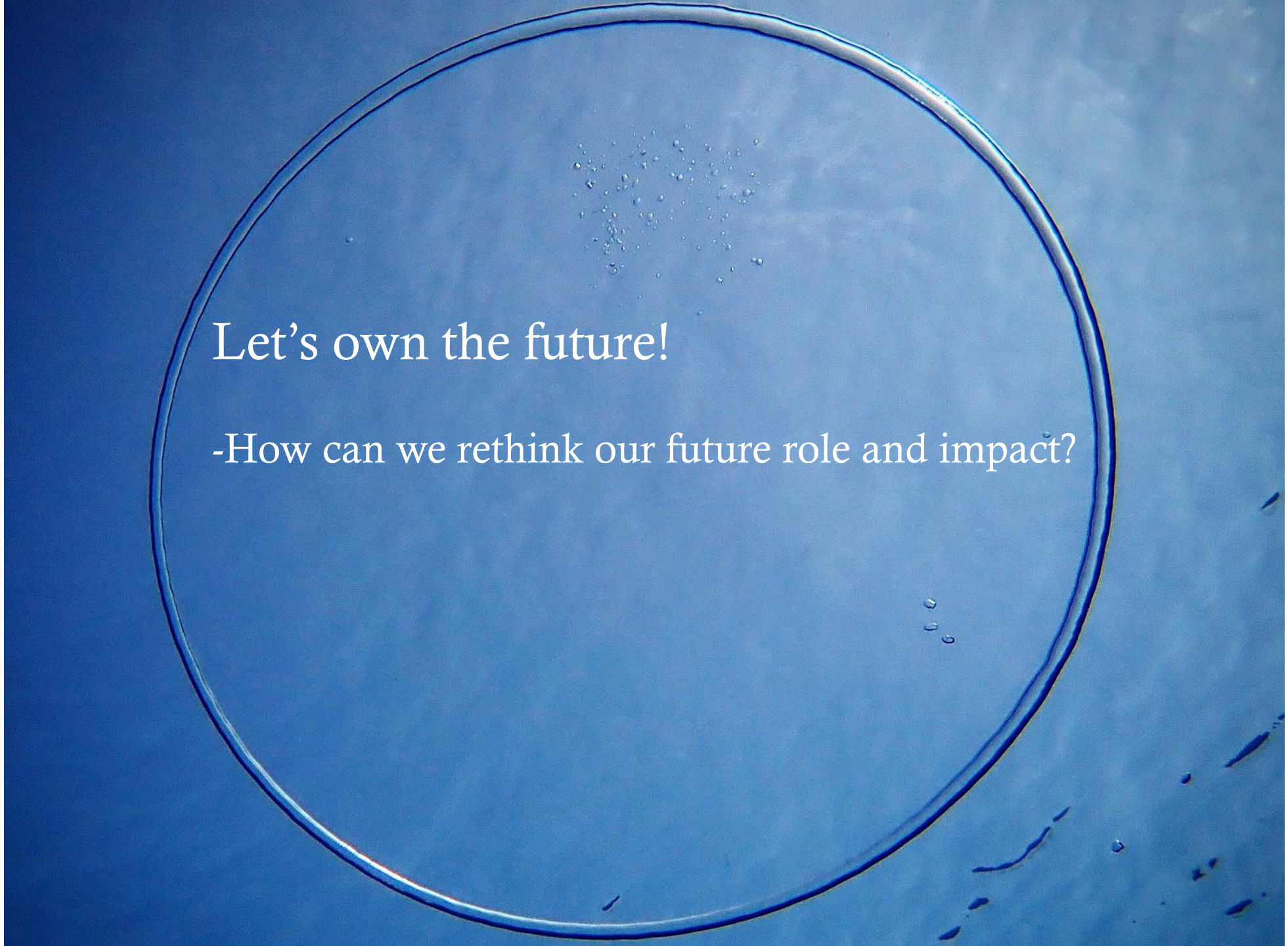
Our roles have become business critical – not because of volume, but because strategy is now quantitative

Call to Action

-Statisticians

-Data Scientists

-Programmers & Engineers


Let’s own the future!
-How can we rethink our future role and impact?

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