

EFSPI Statistics Leaders Meeting 2022

Session 2 Breakout Summaries

Overview

- Summary Feedback from Guests
- Summary Breakout groups
- Backup
 - Slides from guests
 - Slides from breakout groups

Summary Feedback from Guests

- There are clear requirements to the job:
 - We should provide real value, that is why we have chosen pharma and not banking industry for example
 - The job has to be self-fulfilling
 - We should be drivers and not supporters
 - The environment needs to be diverse and inclusive, not only with regard to gender
 - We need a good work-life balance
- We need a shift in thinking making stats more patient centric
 - We need to think about an easier interpretation and communication of result
 - We need to think about if we really use the right tools or the right metric

Summary Feedback from Guests

- We need to be drug developers, identity is not with statistics.
 - We really need more therapy specific knowledge
 - A much better regulatory overview
 - We need more external collaborations and networks
 - We need a better system awareness
- Communication is much more important
 - We need more development of soft skills
 - We need more story telling skills
- Some key proposals made
 - Support next generation!
 - We need more pipeline programs
 - Have more communication courses
 - Be open to change, less conservative
 - We should have more mentors within and outside companies and platforms where we can get ideas and insights

Summary Breakout groups

- What we can do as statistics leaders
 - We need to do more on soft skill training, story telling for the next generation
 - We need to increase diversity in our groups
 - We need more job rotations
 - We need more mentor programs to shadow senior people
 - We should stop talking about soft skills, rather speak about essential skills
 - We need a higher focus on work-life balance and diversity to retain talent
 - We need to foster both, methodological and soft skill development
 - We need to ensure seat at the table also for next gen but with less fights for them
 - We need to be more willing to take tasks on outside of our comfort zone
 - We need to expose next gen to different areas of drug development
 - We need to promote participation in clinical conferences

Summary Breakout groups

- What EFSPI can support
 - EFSPI really needs to support soft skill training
 - EFSPI can have more career stories in the EFSPI newsletter
 - EFSPI has to provide more information on what is interesting to read to increase system awareness (EFSPI newsletter for example as a support platform to be a place to look at...)
 - EFSPI can provide more networking opportunities for the next generation to build cross company networks
 - EFSPI can do more programs for career building
 - EFSPI should rebrand «statistician» terminology to support «drug developer» theme
 - EFSPI should Support associations to develop targeted learning programs for next gen
 - EFSPI can support interviews across the industry on role models
 - EFSPI can support training by building sort of training academy for next gen
 - EFSPI can organize workshop/mock meetings for example on Regulatory interactions

Slides from guests

Next Generation Statisticians

EFSPI leaders meeting 7th July 2022

Kristina Weber

About me

Born in Kazakhstan and grew up in Germany

2008 - 2013: **BSc in Biomathematics and MSc in Mathematics in Finance and Life Sciences**
from Koblenz University of Applied Sciences

Focus on Programming and Statistics, master thesis at BfArM

2014 - 2018: **Statistician at Medical School Hannover**

Supporting trials across many indications and development phases, statistical consultation, IDCC statistician and programmer, supported local ethics committee

PhD on paediatric and rare disease extrapolation at Medical School Hannover (2019)

Since 2018: **Statistician at Roche** (currently Principal Statistical Scientist)

Late Stage Neuroscience indications, focus on rare diseases, filing experience as Study Statistician, study set up of two new trials als Project Lead Statistician with Health Authority interactions, maintenance of ongoing studies, leading the Data Sciences newcomer community

Since 2020: **Member of the PSI scientific committee**

Planning and organizing the PSI conference, online webinars and 1-day meetings

My wishlist for working as a statistician in pharma

- **Being a key driver instead of a support member in teams**
- **Good understanding of different work areas** and their impact on drug development (RWE, HTA, Access, Approvals, ...)
- **Diverse and inclusive** workplace and community
 - Educational background, cultural background, gender, race , disabilities ...
- **Open and transparent** discussion about (cross-functional) **opportunities**
- **Female representation** at conferences, trainings and methods groups
- Combining “**soft-skill**” **project work** with deep dives into **methodological challenges**
- **No silos!** Link and exchange to other internal and external statisticians via working group or committee work
- Regular opportunities to attend and present at **conferences and trainings**
- Higher focus on **soft skill development**

Development of soft skills

- Often it is relatively easy to find trainings or presentations in the methodological field
- More difficult for soft skills which are equally important
- Topics:
 - Negotiation and influential skills
 - Cross-functional Leadership
 - Conflict management
 - Role models and mentoring
 - System awareness (what impact has my decision?)
 - Storytelling and data visualization
 - Critical thinking
 - Awareness of cultural differences

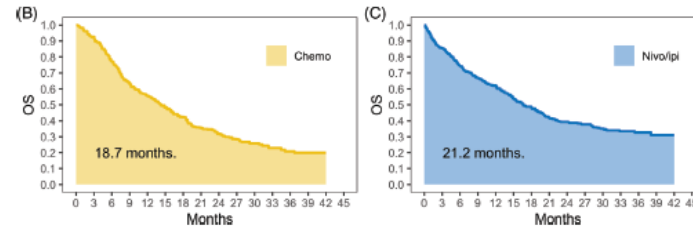
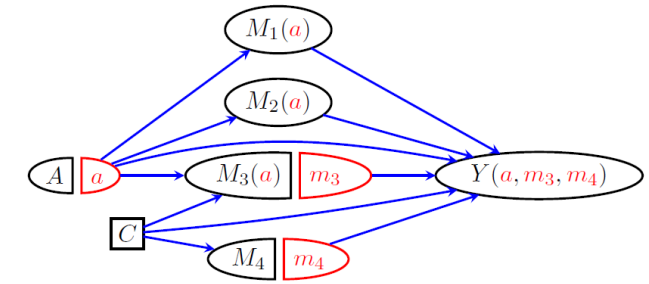
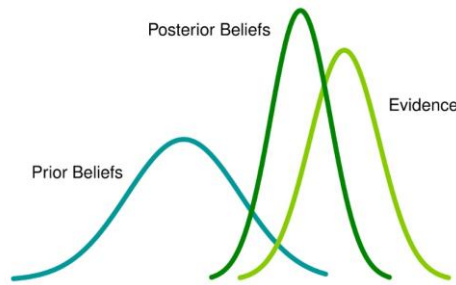
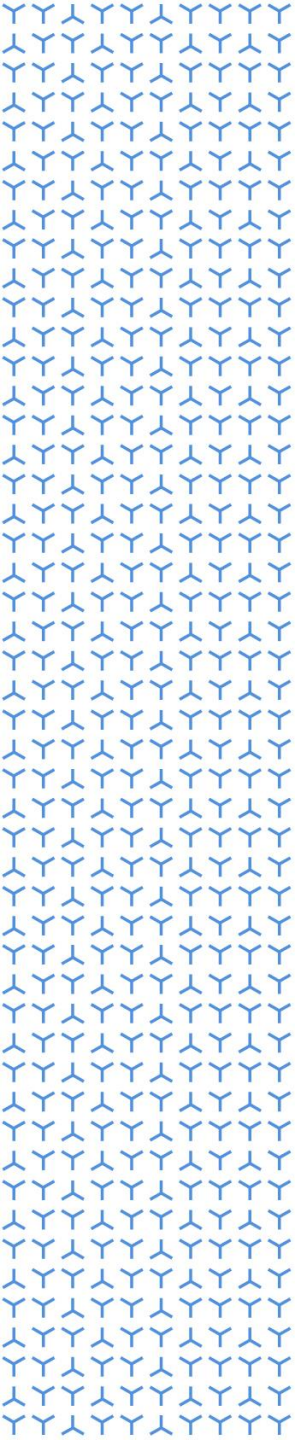


FIGURE 1 Overall survival curves and restricted mean survival time for the immune checkpoint inhibitor trial among patients with NSCLC [Colour figure can be viewed at wileyonlinelibrary.com]



Developing the Next Generation of Statisticians

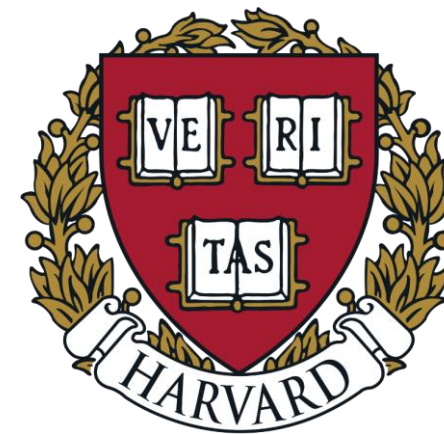
Alex Ocampo Ph.D. Biostatistics
Principal Statistician, Novartis
July 7th, 2022



My Background

Background

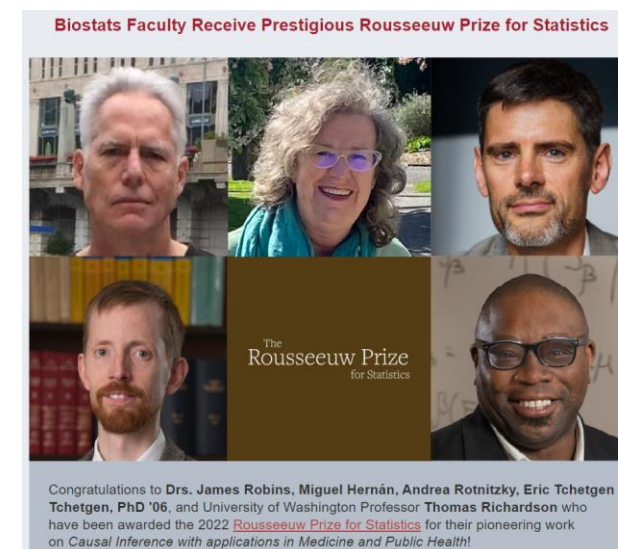
- B.S. Statistics, University of Michigan
- Ph.D. Biostatistics, Harvard University
 - Focus on Missing Data/Causal Inference



Dissertation:

“Breaking the MAR Paradigm: Estimation, Bounding, and Sensitivity When Data Are Missing Not at Random”

- Joined Novartis as a Principal Statistician in Neuroscience in 2020
 - Involved in a combination of trial, exploratory, and methodological work



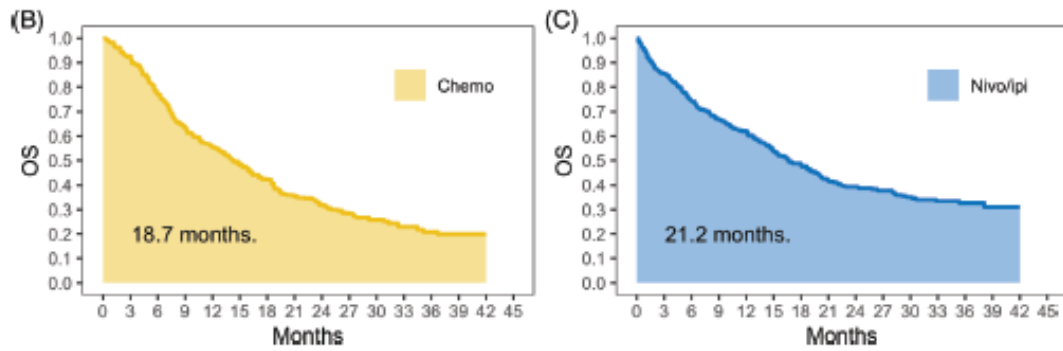


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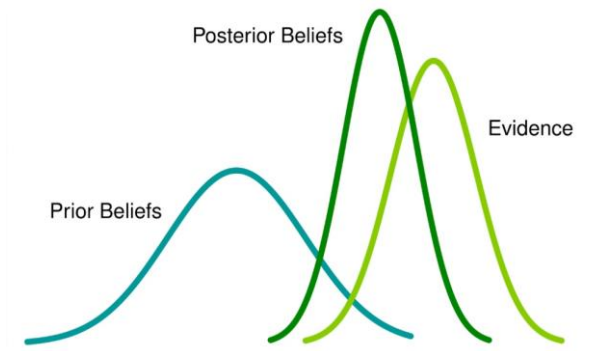
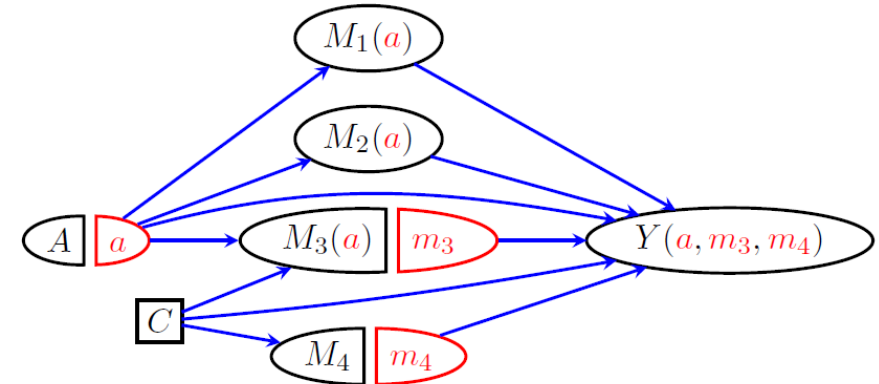


Table 1: Non-collapsibility of the odds ratio in a hypothetical target population

	Percentage of target population	Success rate		Odds ratio
		New drug	Placebo	
Males	50%	80.0%	33.3%	8.0
Females	50%	25.0%	4.0%	8.0
Combined	100%	52.5%	18.7%	4.8



Patient-Centric Statistics

Patient-Centric Statistics

- Many of us enter pharmaceutical statistics because we want to make a difference in the lives of people
- I always ask, “Could I explain this to a patient? To my family?”

Four Thoughts:

1. Hazards can be hazardous
2. Odds can be odd
3. Statistical Significance can be insignificant
4. Correlation can be Causation

Hazards can be hazardous

- Hazard Ratio of 0.79
- Interpretation: 21% risk reduction
 - But it's not a risk.....
- Why should a patient care about a hazard ratio?
- Restricted Mean Survival Time
 - Areas under the Kaplan-Meier curves
- One problematic example:
 - HR = 0.80 (p=0.005)
 - Survival time difference of 10.5 days

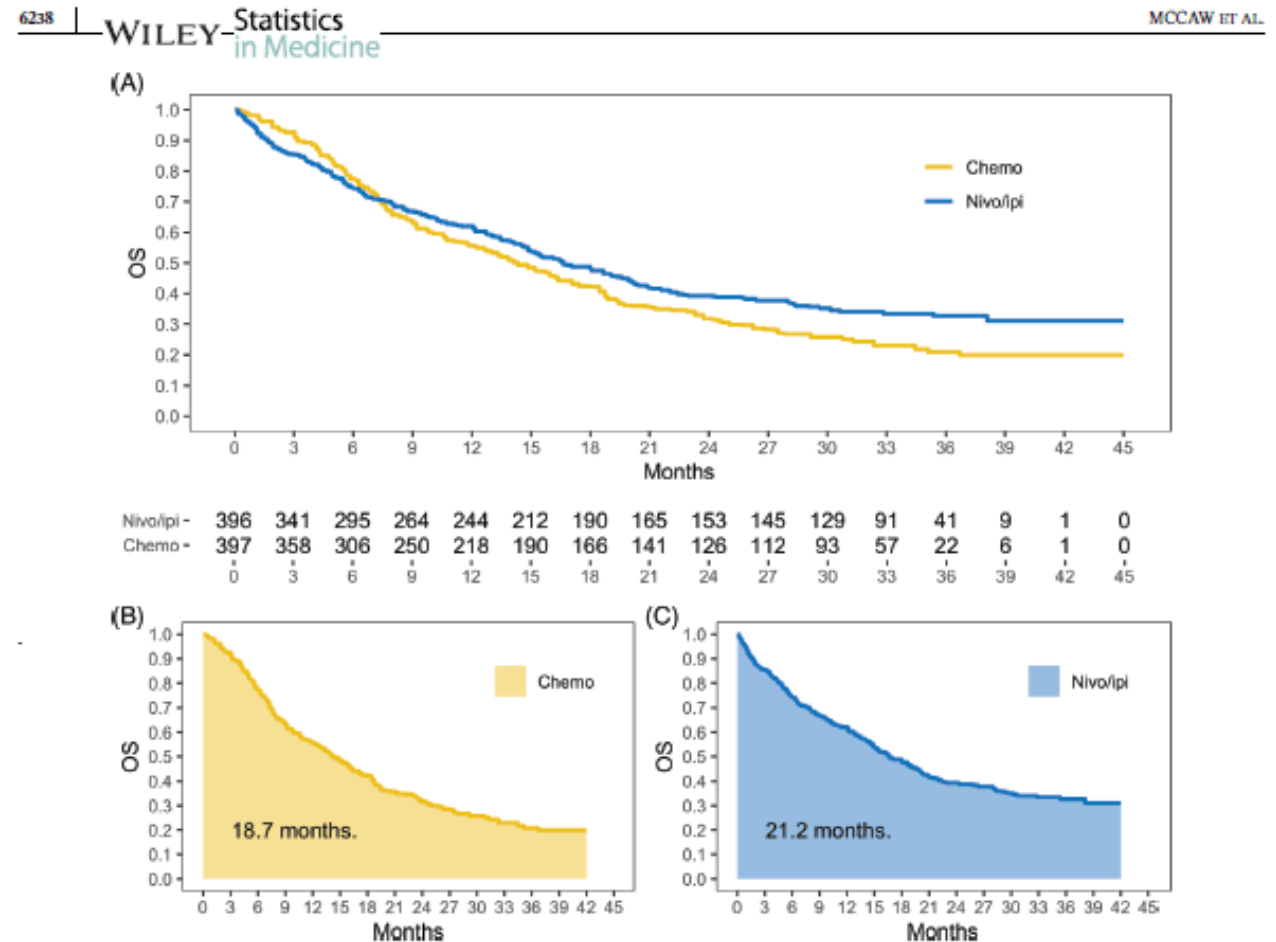
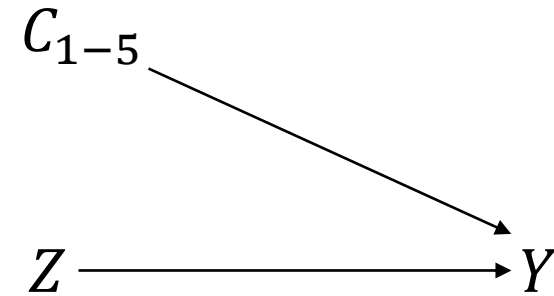


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Odds (ratios) can be Odd

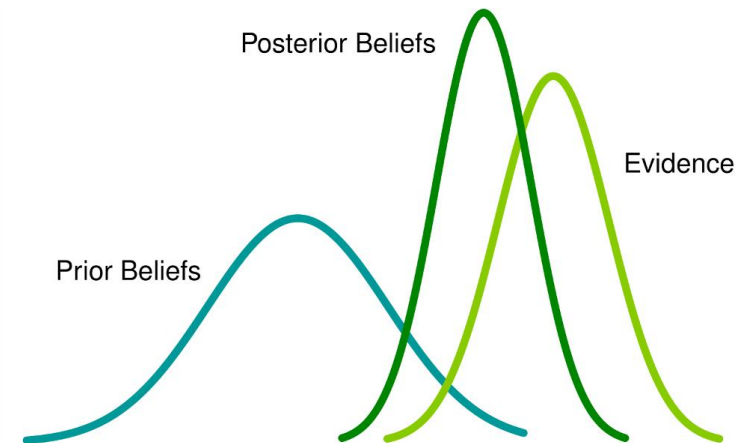
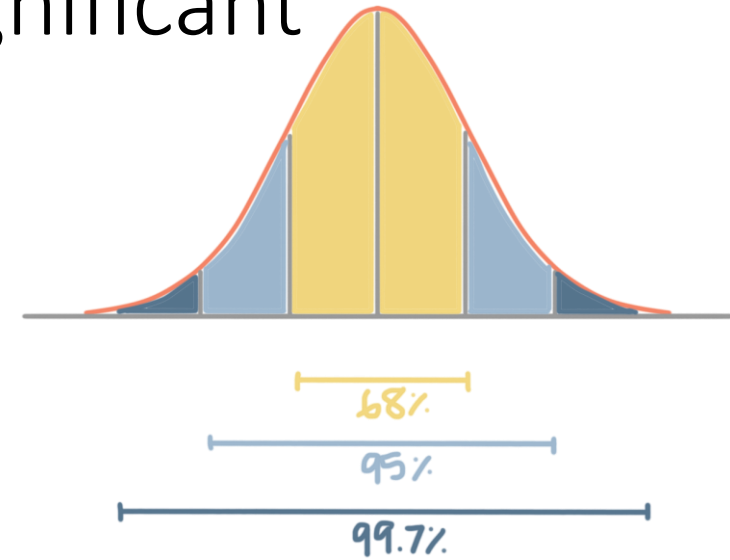
- Non-collapsibility of the odds ratio
 - Distinct from confounding and can occur despite randomization and large sample sizes.
 - Patients aren't generally concerned with odds ratios...



Model	Conditional Estimate ($\hat{\beta}^j$)	Marginal Estimate ($\hat{\theta}$)
<code>glm(Y~Z,family = "binomial")</code>	2.089	2.089
<code>glm(Y~Z+C1,family = "binomial")</code>	2.284	2.085
<code>glm(Y~Z+C1+C2,family = "binomial")</code>	2.583	2.074
<code>glm(Y~Z+C1+C2+C3,family = "binomial")</code>	3.134	2.075
<code>glm(Y~Z+C1+C2+C3+C4,family = "binomial")</code>	4.429	2.079
<code>glm(Y~Z+C1+C2+C3+C4+C5,family = "binomial")</code>	12.011	2.082

Statistical Significance can be Insignificant

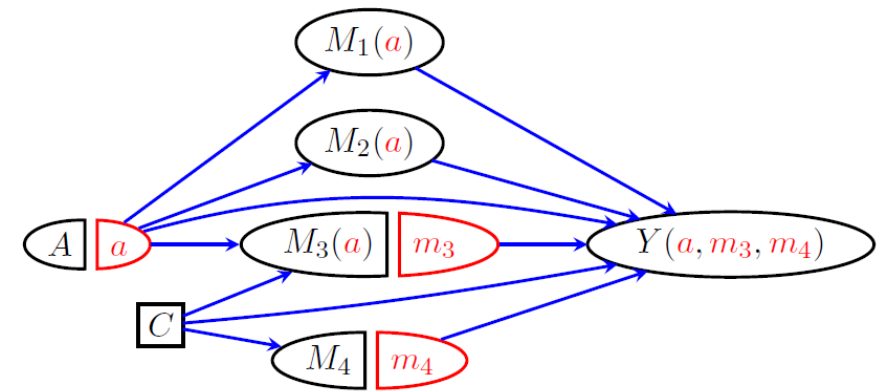
- Controlling **Type I error** is crucial in pivotal trials; I am not suggesting abandoning p-values
- However, a p-value has no scientific interpretation
 - Where did threshold of 0.05 come from?
- Testing a null hypothesis is just one of many questions
- More emphasis on Bayesian methods



Correlation can be Causation

- Causal inference has exploded over the past few years
- ICH E9(R1) Addendum was a first step in bringing causality into pharmaceutical trials
 - Intercurrent events disrupt causal effects of treatment
 - Benefits of random assignment fade with time
- Future pharmaceutical statisticians will need to be fluent in causal inference
- Patients are interested in causes, not correlations

id	$Y(0)$	$Y(1)$	A	Y
1	?	1	1	1
2	0	?	0	0
3	?	0	1	0
4	?	1	1	1
5	1	?	0	1

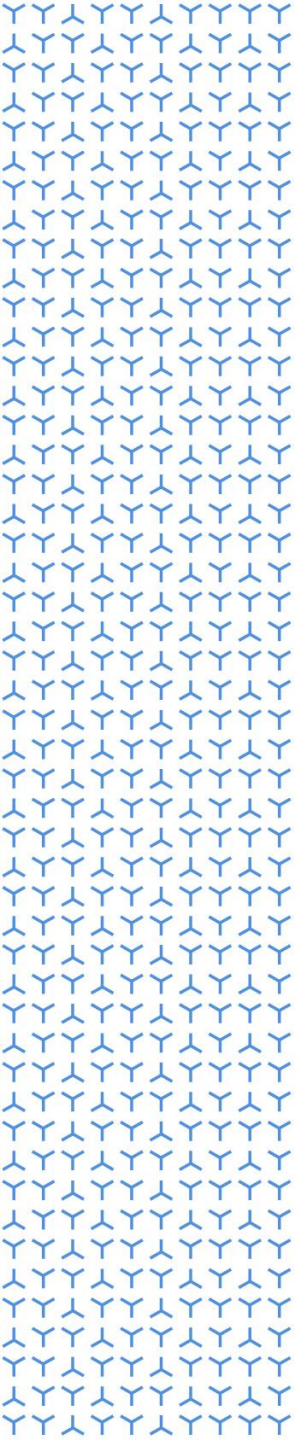


Challenging the status quo

- The pharmaceutical industry is a conservative
 - This is a good thing! The results of our studies have huge impacts for global health
- Always keep the patient in mind

“The quiet statisticians have changed our world - not by discovering new facts or technical developments but by changing the ways we reason, experiment, and form our opinions about it.”

- Ian Hacking



Fostering a Modern Workplace

What does the next generation of statisticians need?

Continued Education

- More than most fields, we need to be constantly trained as our field pushes forward at a rapid pace
- Hands on coding workshops
- Training Lectures
- Institutionalized Journal and Book clubs
- Learn by doing!
 - Opportunities to innovate within our trials
 - The best way to learn is through a hands-on project
- Our leaders need to carve out time for us to grow and learn



Diversity

- Our generation values diversity!
- Racial/Cultural Diversity has historically lacked
- Gender representation
 - Oxford Collaboration Example
- Solutions?
 - Need to be proactive
 - Pipeline programs to groom the next generation of diverse statisticians



Collective

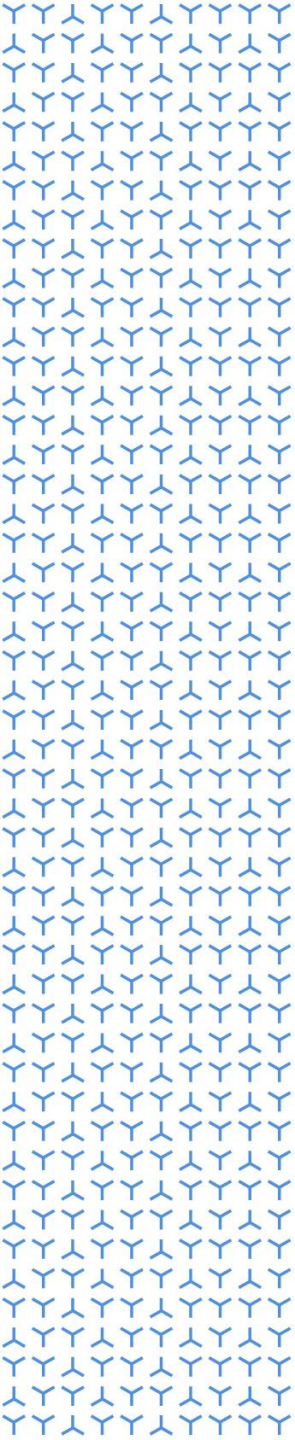


Individual

Post-Pandemic Work Life Balance

- The pandemic fundamentally changed all our lives, and made many of us alter our relationship with work
- Leave Hybrid/Remote work balance up to the employee
- Taking time to nurture our mental and physical health enhances productivity





Summary

Summary

- 4 Shifts in Statistical Thinking
 - Hazards of hazard ratio
 - Oddity of Odds
 - Insignificance of Statistical Significance
 - Causation of Correlations
- Modern Workplace for Statisticians
 - Emphasis on Continued Education
 - Diversity
 - Autonomy in Remote Work Choices

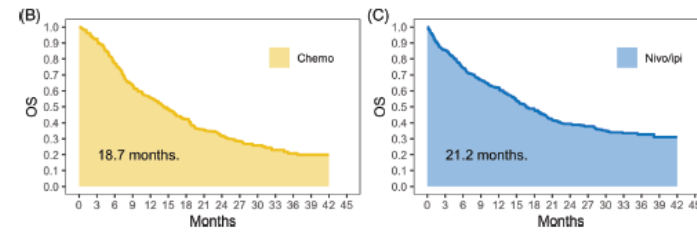


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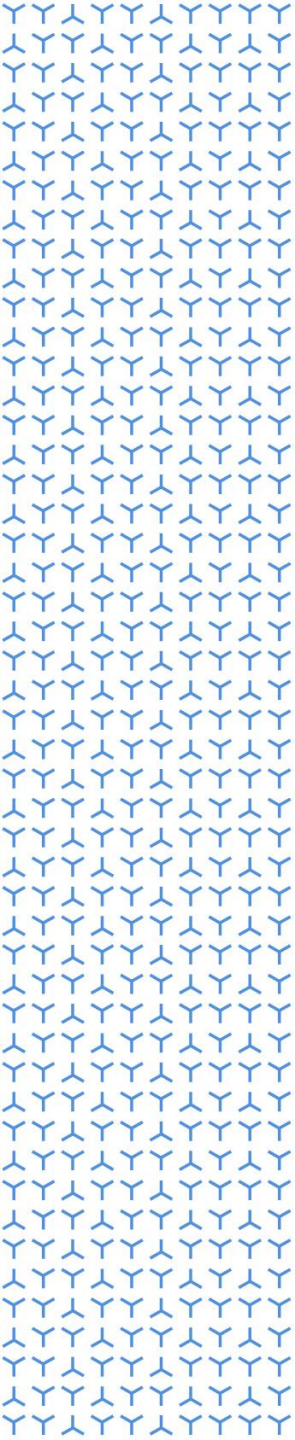
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Thank you



Developing next generation of statisticians *as drug developers*

Evgeny Degtyarev

Feeling as drug developer

- removes hurdles to speak up on non-statistical topics and considerations including choice of indications, regulatory strategy, budget etc
- provides more opportunities to have impact and to influence decision-making
- ensures stronger rational voice in trial teams and project teams

But it requires

- understanding drug development
- communication skills

My journey at Novartis

Masters in
Mathematics-
Economics

Oct 2012

joined Novartis

Feb 2013

Global Program
Biostatistics Head

2020

25% rotation in
Commercial

Since March 2022

Incomplete list
of my learnings
and experiences
at Novartis:

Therapy type specific knowledge (targeted therapy, immuno-therapy, CART)
Disease-related knowledge across several indications in oncology & hematology

Trial- and submission-related activities (as trial statistician
or supporting statistician)

Leading a team of quantitative scientists

Development plan activities

HA meetings

Company structure and decision-making processes; cross-functional collaboration in trials, projects and initiatives

BD&L activities

Statistical methodology (e.g. Bayesian designs, group sequential designs, use of external data)

Industry-working Group on Estimands in Oncology

Internal and External Presentations; TEDx talk and Storytelling training

How did I learn about drug development? External opportunities

Masters in
Mathematics-
Economics

Oct 2012

joined Novartis

Feb 2013

Global Program
Biostatistics Head

2020

25% rotation in
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Since March 2022



(biotech journalists,
investors)

FDA Advisory Committee Meetings

FDA/EMA summary review documents

Earnings Conference Calls / Company presentations

Exposure to other companies and different perspectives (e.g.
through industry working group)

How did I learn about drug development? Internal opportunities

Masters in
Mathematics-
Economics

joined Novartis

Global Program
Biostatistics Head

25% rotation in
Commercial

Oct 2012

Feb 2013

2020

Since March 2022

My colleagues, mentors and managers

Exposure to different disease areas, therapies, study types etc.

Participation in global project team meetings, board meetings and HA meetings (just listening is valuable!)

Disease/Therapy specific newsletters from Competitive Intelligence

Watching NVS Earnings Conference Calls

Participation in BD&L activities

Key challenges

- Understanding complex organizational structures (incl. all statistics-related functions) and decision-making processes
- Understanding different roles of all stakeholders in the healthcare system, their requirements incl. statistical and non-statistical considerations
- Identifying best ways to learn about drug development (externally and internally), appropriate timing to use them and improving the ability to filter information
- Developing communication and storytelling skills

Slides from the breakout
groups

Virtual Breakout group 1

- Armin Schüler

1. What skills sets are key for NextGen statisticians and how can EFSPI help statisticians upskill and be future ready (use materials from ice breaker)?
 2. Today's statisticians: what are key strengths, what are key gaps, how can EFSPI help fill gaps? And what do we expect will change in the future?
 3. What do we learn from the next generation on their specific needs for development?
 4. What have we learned from our own career journeys to advance careers and leadership skills and how could EFSPI help to share stories from entry roles to executive leadership positions?
 5. What have we learned in developing staff in how best to adapt and advance skills / capabilities?
- How can EFSPI help to shape career development and support NextGen statisticians?

- **Embrace diversity** => there is not one fit's all development
What is the best fit in the company – a methodology statistician, a team lead
Keep in mind people change over time – rotation is key
- Domains of applications
 - what skills are needed for different areas
 - identify different domains of applications => different skills are associated
- **Job rotation** is standard in other functions, but not for Stats? Why?
 - e.g. learning from preclinical, data science teams/system information, PoS for portfolio development, including geographical(?)
 - => there are several possibilities
 - => it would also bridge the gap to data science functions in general
- **Mentoring program**
 - buddy/senior shadow stats (allow you not to be on the spot)
 - allow to make mistakes / failing are part of development
 - allow time to learn [this is not a Friday night activity] – not only when time allows
 - journal reading / books, e.g. discuss readings with your mentor
 - have a good / safe environment for asking question
- Talk the language you would like to influence
 - => expose people to challenges (see above – allow to make mistakes)
- EFSPi might do more for networking during the early career to build-up a network. Specially to build up cross-company networks

- The project statisticians need to know what they don't know (blind spots)
- Slide from Kristina – on soft skills
=> rename to essential skills – they are not soft
- The statisticians are the quiet member of the team
=> You have to earn your position in the team
=> shift from CFR 21 part 11 statistician to a contributing member
- If you act as a human calculator you are treated as a human calculator
- The project statistician has to be 3 lingual
 - able to talk with the science stats
 - able to talk with the team
- Do not forget the sound knowledge behind
=> reminder – we are the statistician in the team – a little bit old school is needed
- **Don't provide analyses – provide interpretations - provide recommendations!**
 - **the step from number cruncher to contributor**
 - **interpretation includes to know the ~~limitations~~ risks and the strength**
- move from this is not possible ... to this we have to do to overcome
=> solution orientation
=> story telling skills - show the limitations/risks and opportunities in an easy way

What are we doing

Different types of statisticians

1

“liaison officer” statistician who represents stats in the project/manage the communication to the outside world

2

“scientific” statistician who thinks about methodology, designs



Biostatistic Roles

3

“QC” statistician who checks correctness of tables, consistency of protocols

4

analyst statistician who does analyses himself and dive into the data very deep / like to visualise data

Virtual breakout group 2

Session 2 Breakout
Remote Group 2

Stefan, Richardus, Anamaria, Melanie, Simon, Frank

Q1: What skills sets are key for NextGen statisticians and how can EFSPI help statisticians upskill and be future ready (use materials from ice breaker)?

- “ability to speak up” + list from Kristina Weber
- “be a drug developer”, not “just” a statistician. Be a core member of development teams!
- Make sure to create a network with other functions
- Invest in soft-skills from the beginning!
- Be humble about influencing – this takes place on many different levels.

Q2: Today's statisticians: what are key strengths, what are key gaps, how can EFSPi help fill gaps? And what do we expect will change in the future?

- Challenge: we have to get the basics right!
- We need a good package: good understanding of the space they are working in (confirmatory trials, RWE, manufacturing, ..)
PLUS good soft skills.
- “the curse of easy to use software”
- Strengths: fast learners, less risk averse, tech savvy, pushing software to the limit.

Q3: What do we learn from the next generation on their specific needs for development?

- Environment savvy, better networkers (also through technology)
- High(er) focus on “work-life balance” and diversity
- Higher willingness to change (likely to increase with remote working environment)
- Development rather than “just” promotion
 - Quicker moves to new fields
- Need for continuous motivation – retention!
 - Competitive environment, also beyond pharma

Q4: What have we learned from our own career journeys to advance careers and leadership skills and how could EFSPI help to share stories from entry roles to executive leadership positions?

- Note: executive leadership is a fundamentally different job, so be careful what you wish for
- These are our career stories at the time we were entering. Question is what of that is useful now.
- Question: how do we facilitate for those who aspire this to move in executive leadership positions
 - Motivate to look into different areas – diversity of skills and knowledge
 - Manage expectations: plateaux ahead...
- Facilitate finding their own ways
 - Examples

Q5: What have we learned in developing staff in how best to adapt and advance skills / capabilities?

- Indulge in taking the time to speak with staff
 - Beyond just giving advice, provide context and insight in thought process
 - Help to develop thought process
- “purposeful questions”
 - where do you want to go, how do you want to get there, and how can I help?
 - Encourage self-awareness
- Be a facilitator and mentors!
 - Help to open the view beyond the comfort zone
 - Exposure!
 - Not just giving answers

Q6: How can EFSPI help to shape career development and support NextGen statisticians?

- As people tend to move between companies, EFSPI could be the underlying “support platform”
 - Industry wide approach
- Career development should be a regular part of statistical conferences
 - So is the development of soft-skills
 - We (EFSPI) need to provide these opportunities!
 - Focus on young(er) statisticians to ensure relevance (selection bias 😊)

Breakout group 1

Emmanuel Zuber

Q1: What skills sets are key for NextGen statisticians and how can EFSPI help statisticians upskill and be future ready (use materials from ice breaker)?

- Methodological skills not to be neglected:
 - estimand framework, defining what we measure, causal inference to become part of DNA of stats. AI and ML less relevant
- Becoming drivers in teams,
 - ensuring your seat at the table (condition for impact and fulfilling purpose) beyond “support function”
 - providing an environment securing this seat is also critical to attract talents and improve retention
- Expert and leadership skills: need both to enable impact.
 - Perceiving yourself as a “drug developer” is an inspirational definition
 - Leadership: Biggest gain for new joiner (Alex O)
 - Diversity of profiles remains important

Q3: What do we learn from the next generation on their specific needs for development?

- High expectations:
 - Work life balance
 - Importance of diversity
 - Purpose and value of the role
- Awareness of areas and opportunities other than pharma
- Importance of soft skills learning (training, exposure...)
- Importance of the patient perspective
 - For purpose and to put ourselves in the patient's shoes
 - For understanding of the patient journey
 - To understand how to make treatment effect estimate meaningful
 - To understand the regulatory perspective (also having the patient in mind)
 - To understand one of our contributions to the drug : credibility and trust

Q6: How can EFSPI help to shape career development and support NextGen statisticians?

- EFSPI role (EFSPI means actually Stats leaders too (us)):
 - Need/continue to make it attractive for newcomers to attend sessions organized by EFSPI:
 - soft skills trainings with emphasis on its importance in the job
 - Exposure to regulatory thought process (regulatory workshop, mock regulatory debates)
 - Further support the perceived value / visibility of the function by stakeholders
 - To minimize or support the fight for newcomers
 - Embrace new challenges to the role to support change/make it meaningful
 - ML / AI, black boxes to be explained
 - Support the perception that trial/project work is fascinating
 - attract young talents not just by “advanced analytical projects”
 - Emphasize the purpose of our role
 - Support cross-company exposure and collaboration for newcomers
 - To broaden perspectives and highlight the need to understand context
 - Depends on company culture: EFSPI can support beyond
 - Foster diversity
 - Reach out to Universities in areas with less access to our roles to foster education and build talent pipeline
 - Foster soft skills trainings and cross-functional exposure
 - Trainings with trainers from other functions
 - Learn to articulate stats concepts to non-statisticians

Breakout group 2

- Katell Bernois

Q1: What skills sets are key for NextGen statisticians and how can EFSPI help statisticians upskill and be future ready (use materials from ice breaker)?

- Emphasize on soft skills training
- Multilingual in programming
- Thinking / drug development skills
- EFSPI => library of available trainings, pre-selection, help selecting the ones worthwhile
- Training academy – Raise awareness regarding drug development understanding – Collect available courses
- Interviews from role models within the industry across
- EFSPI Mentoring program

Q3: What do we learn from the next generation on their specific needs for development?

- Want to have an impact, being influential
 - Being exposed
 - Broadening their understanding
 - Give time / room to get out of the stats jobs and spending time with clinicians and develop knowledge
-
- EFSPI to promote key aspects needed for development path

Q4: What have we learned from our own career journeys to advance careers and leadership skills and how could EFSPI help to share stories from entry roles to executive leadership positions?

- Being exposed to different areas of drug development
- Promote exposure to clinical conference (e.g. ASCO) and interact with drug development professionals
- Videos on career journey across the industry from actual leaders or professional at all levels with discussion on what where the key inflexion points in their careers

Q6: How can EFSPI help to shape career development and support NextGen statisticians?

- Share experience from different role models in different tracks of careers
 - Methodology Group
 - Global Stats
- Exposure to motivational / driving factor from patient from a tangible perspective
- EFSPI can partner with PSI for example Introduction into Industry training courses or other organisation to promote drug development trainings
- EFSPI to organize workshop/mock meetings for example on Regulatory interactions
- EFSPI and Stats leaders to influence within their company so Stats is not seen as a service provider

Breakout group 3

Pierre Lebrun

Q1: What skills sets are key for NextGen statisticians and how can EFSPI help statisticians upskill and be future ready (use materials from ice breaker)?

- Roles of a statistician in 5-10 years -> defines skill sets
- Types of statisticians (global understanding vs. specific expertise)
 - Identify career path is really a senior leadership role
- Drug development does not stop at approval and does not start at Phase I -> different skills for different areas
- Project management skills is important to group all statisticians (from early dev, manufacturing, pre-clinical, clinical, HTA, etc.)
 - With a good understanding of all the value chain to connect the dots
 - It's a leadership role (should it be taken by stat are even broader to create one team?)
- Project management skills, soft skills (negotiation, cross functional communication...), statistical skills (new methodology)

Q2: Today's statisticians: what are key strengths, what are key gaps, how can EFSPI help fill gaps? And what do we expect will change in the future?

- Gap: statisticians, on average, have difficulties to translate knowledge into something other roles can understand
 - However, that's the very role to explain what we do and why and how
- Gap: slides made by other roles are really hard to read for statisticians -> because of lack of understanding
- Needed key strength: Stats need to be able to rephrase questions from doctors, scientists, labs,... otherwise all the rest of the subsequent work can be misaligned & unnecessary
- EFSPI can help identifying trainings specific for statisticians
 - Leadership, communication etc. but stats specific, mentioned in newsletter
 - EFSPI can help that organization can share their soft-skills courses developed in house ? Or sharer what organization provides such course with high quality

Q3: What do we learn from the next generation on their specific needs for development?

- Diversity and inclusion mean a lot to them
- They are generally very curious and this curiosity needs to be quickly satisfied
- They come with expectations, and not only on statistics
 - They want / need values and culture for the enterprise
 - They want to progress on their soft skills
- Development needs to be tailored to each individual
 - With transparency, showing what are all opportunities

Q4: What have we learned from our own career journeys to advance careers and leadership skills and how could EFPSI help to share stories from entry roles to executive leadership positions?

- Say yes to tasks outside comfort zone. Added value in long term
- Embrace roles that you don't know if you are a good fit (ex: manager position)
- Have a huge variety of projects to have quickly a helicopter view of the value chain, and be able to see if some topics are more interesting than others
- EFPSI -> stories in newsletter (with positive and negative outcomes, but always focus on the lessons learned)

Q5: What have we learned in developing staff in how best to adapt and advance skills / capabilities?

- Staff can learn a lot by themselves (reading, on the job)
- EFSPI can help the industry understand some choices commonly made by stats
 - Have a second statistician at regulatory meetings, or additional observer(s)
- Need a good balance between broadening skills and deepening skills
 - Both stats skills and soft skills, at different career levels
 - Have tools & share experience to identify who is suitable for broadening or deepening

Q6: How can EFSPI help to shape career development and support NextGen statisticians?

- EFSPI can help locally to have job fairs organized either in university or in industries
- EFPSI can bring more reasons to guide early career to pharma (e.g. in events non fully dedicated to pharma, but more industry in general)
- EFPSI can help rebranding the “statistician” terminology

Breakout group 4

- Chrissie Fletcher

Q1: What skills sets are key for NextGen statisticians and how can EFSPI help statisticians upskill and be future ready (use materials from ice breaker)?

- Skills sets will vary for different career paths e.g. tech/methodology/specialist roles versus study/project/TA paths
- NextGen will want to get a mix of different career paths and not see them as one or the other so let's focus on the interface and opportunities to change focus over time aligned to career ambitions
- There will be common skills sets and mindsets/behaviour such as being curious, learning and applying
- Soft-skills tend not to be as developed as tech skills so Uni is building the foundation of tech skills and in Pharma we need to build the soft-skills
- EFSPI could help promote with associations how to develop leaning programs for soft-skills and to share experiences and best practices across companies
- Could EFSPI develop a mechanism to certify soft-skills to recognise them or discuss ways to recognise proficiency levels in both tech and non-tech skills

Q2: Today's statisticians: what are key strengths, what are key gaps, how can EFSPi help fill gaps? And what do we expect will change in the future?

- NextGen need to consider drug developers not just statisticians
- NextGen want diversity and highly value
- NextGen need managers to help them understand why seeing the bigger picture will help with career develop

Q3: What do we learn from the next generation on their specific needs for development?

- Personalised development is key
- Open discussions about their future potential
- Keen to collaborate with each other across companies early in their career
- Could EFSPI have a 'NextGen' group to network and share experiences. Some associations are doing this already
- Mentoring is valuable, could EFSPI have a mentoring program? Some associations are doing this already
- Night before EFSPI Stat leaders or other key meetings host a NextGen event to engage
- NextGen want diversity in the range of activities they can get involved in e.g. due-diligence and be stretched so they can achieve their full potential
- Develop materials and story of the full range of roles statisticians now have in modern drug development – EFSPI and local associations
- Do we use interns enough in our companies to be more competitive against other sections
- NextGen value the high value and purpose they feel they have in making a difference to patients – do we use this enough to differentiate Pharma from other Industry sectors?
- Helping people understand what 'purpose' means to them – what values drive them, what is important to them, how they share that with managers and how this can influence choices and areas of focus

Q4: What have we learned from our own career journeys to advance careers and leadership skills and how could EFSPI help to share stories from entry roles to executive leadership positions?

- Being able to articulate your personal career ambitions – being honest, open, accepting feedback, seeking suggestions – and doing this early in your career
- No one comes knocking on your door to tell you what to do
- There is no right or wrong choices
- Managers spending time discussing career and regularly and not just focussing on project progress
- EFSPI could support more Pharma Industry career events to Uni's to promote opportunities and compete
- NextGen can now enter the profession with a more diverse and range of degrees and we need this and enable individuals with different backgrounds to thrive

Q5: What have we learned in developing staff in how best to adapt and advance skills / capabilities?

- More diverse career paths are emerging allowing statisticians to take on roles outside of statisticians which can help to enable them to be better statisticians if and when they return to stats
- Can EFSPI stats leaders share what they've done to introduce different opportunities for statisticians, e.g. secondments, rotations
- Leaders need to keep abreast of the dynamic nature of how skills and capabilities are changing over time

Q6: How can EFSPI help to shape career development and support NextGen statisticians?

- NextGen want a one-place to go for skills building – connecting what is available internally and what is available externally
- Not all statisticians will start from the same place, so EFSPI could develop list of key skills that will help NextGen to support career growth
 - Point to publicly available skills and EFSPI related materials
- NextGen can then understand where they are with proficiency levels and which areas are most important to focus on over time
- Story telling, comms skills were key themes
- EFSPI could have a careers committee to focus on how NextGen, mid-level and senior leaders continue to develop skills across their careers
- EFSPI could share more case studies and career journeys e.g via vblogs
- Any activities need to be dynamic
- Can EFSPI influenced Uni to include more soft-skills in the undergrad/post-grad courses
- All statisticians should be encouraged to develop soft-skills with other colleagues outside of stats
- Can EFSPI help senior leaders share approaches to convince mgmt. to secure budget to utilise external resources/experts who can deliver high value/expert programs to allow programs to be available to more people and earlier in careers