**Promotion Optimization Year-End 2021 Accomplishments**

* **Oncology / Keytruda Budget Allocation, Sales Impact Analysis and Consultations (Informed ~$1.1B budget for 2021 & 2022) :**
  + <BB> DOMINO – Guided the allocation of $522MM of current year promotional budget and $565MM of 2022 promotional budget, primarily for Keytruda.
    - Added new brand Weilreg to the model.
    - Developing processes to add Lenvima and Lynparza as additional brands.
    - Allocations are suggested at multiple levels: brand, tumor, HCP vs Consumer, channel, and vendor
    - Involves coordination with multiple Merck teams and getting buy-ins from MLT.
  + <BB> CIA – Optimally allocated ~$45MM of HCP digital budget for Keytruda.
  + Multiple adhoc consultations
    - <BB> Provided ICE team and Oncology Portfolio team with analytical support and consultation regarding testing designs, interpretation of impactable revenue and ROI and adhoc impact analyses for: NBE beta values for CEI and lift measurement, Crossix HCP promotion measurement, Demandbase program measurement, Test/Control analysis of Contextual Search, etc.
* **Keytruda Consumer Analytics (Investments informed: ~$140MM) <AR>:**
  + Developed several consumer impact models (mkt mix) and optimal investment scenarios for 2022
  + Collaborated with stakeholders (brand/media/INI/Crossix team/Finance) on a day-to-day basis to share analytics POV in decision making
  + Pilots:
    - Precision marketing pilot – Designed a multiple test pilot to assess a) impact of increasing consumer promotion on high priority geographies b) impact of removing consumer promotion from low priority geographies
    - Help the team design a pilot for the TNBC SDoH (Social Determinants of Health) campaign
  + Adhoc analysis –
    - TV business case – Created and presented a business case to Keytruda leadership to secure TV funds for 2021 Q4
    - Impact of multi-cultural marketing – Analyzed Keytruda conversion rate differences by ethnicity
  + Close collaboration with Crossix and Brand team – particularly on enhancing Net Impacts, guiding channel allocations on ongoing basis and paid search optimization methodology enhancements.
* **Vaccines Consumer Analytics Support (Investments informed: ~$112MM) <AR, AD>**
  + Developed ongoing optimal investments for various Gardasil promotions.
  + Net Impact analysis (Adult and Adolescent) – Worked with Crossix & INI to calculate cost efficiency at indication, channel, and publisher level
  + Collaborated with stakeholders (brand/media/INI/Crossix team) on a day-to-day basis to share analytics POV in decision making
  + Adhoc analysis –
    - TV business case – Helped the G9 Adult brand team to prepare a business case to retain TV for 2021. Analyzed contribution to public and private sales, and drive TV importance to grow G9 business during COVID
  + Pneumovax - Helped the DET team select test and control geographies for testing more targeted creatives created through a tool
* **Mkt Mix and Promotional Response Curves (serves as basis to inform *several hundreds* of millions of dollar investments on marketing promotions):**
  + Keytruda **(twice)** <BB,AR,ZS>, Lynparza <AS>, Gardasil Adolescents **(twice)** <AR, AD>, G9 Adults **(twice)** <AR,AD>, Pneumovax <DZ, AR>, Januvia <TQ>, Steglatro<TQ>, Belsomra<DZ>, Bridion<DZ, BB>
  + **New:** Lenvima <AS / BB>, Ped vaccines (two) <DZ, BB>
  + <TQ> Detailing PRCs for Belsomra, Januvia, Steglatro, Gardasil9, Pneumovax23, Rotateq, Vaqta and Isentress
  + <BB, DZ> Researching on impact measurement alternatives due to iOS15 changes.
  + <AR, BB, Team> Mkt Mix Data Lake integration initiative and support **– very resource intensive coaching, problem resolution and guidance**. Partnership with global data team to automate future mkt mix data collection process. Involves integration of several tens of HCP promotions (personal & non-personal), HCC promotions and sales data.
    - Assisted the team in developing a project plan (data flow, QC checks, system alerts), coordinated discussions on data sourcing (Big Query/APIs/Media agency), had knowledge transfer sessions on data manipulation for marketing mix
* **DET <AS, DZ> - Informed HCP DET spend of ~$24MM:**
  + **New:** Dificid, HIV (2X), Belsomra, P23, Bridion.
  + Gardasil Adolescents
  + Detailed analysis by specific campaigns, vendors and segments.
* **Other Consumer Promotions:**
  + Modeling / ROIs / Crossix / Adhocs
  + Lynparza<AS>: ROIs and Optimal mix.
  + Measured sales impacts for P23<AR>, Januvia<AS>, Steglatro<AS>, Belsomra
  + <TQ/AR> Identified pilot counties for Vaccine Confidence HCC marketing pilot.
  + <TQ> Point of Care ROI analysis support for multiple brands, vendors, and programs
* **Health Map**
  + <AS, AR, SM> Guidance and multiple verifications being provided to Deloitte and Merck’s Health Map team to conduct a net impact analysis and potentially replace Crossix in the future (pilot savings: ~$400K. Future saving potential of few million dollars).
  + Identified gaps in vendor net impact methodology. Collaborated internally to suggest an improved version of the patient test and control matching
* **Adhocs:**
  + <AR, AD, AS> Consumer: Ongoing consultations, Crossix, TV impacts, Digital impacts and Promotion Mixes. Directly informing decisions to invest ***~$100MM to $200MM***.
  + NWOW DTC performance Analysis: Keytruda <AR>, Gardasil <AR>, Januvia<AS>, Pneumovax<AR>
  + <AR, TQ> Januvia LOE related multiple analysis and consultations on “When to stop what”. ***Investment decisions involved is $50MM+.***
  + G9 Adult / DET <SM> – 2021 Monthly execution plans, optimal spends to meet forecast
  + <AS> Pilot geography selection for Gefapixant DTC campaign
  + Several T/C analysis for vendors of interest (ex: Keytruda contextual search)
  + <Team> Consult on measurement options for Gardasil pharmacy HCC/HCP programs, and digital health programs<TQ>
  + <Team> Transitioned to SAS and R in RWDEX platform.
  + <BB> Helped to onboard 6 new 3PVs through data reviews, consistent mappings, standardizing and training.

* **IPF (Optimal allocations and Investments informed for $262MM 2022 budget - Chronic Care BU $77MM and Vaccines BU $185MM):**
  + Lead and coached by Ambika Rana.
  + G9 Adol<AR>, G9 Adults (approx.)<AR>, Ped vaccines <BB> , Januvia <TQ>, Steglatro<AS>, Belsomra<AS, DZ>, P23<DZ, AR>
  + 2022 Budget suggestions through scoring models for Chronic Care BU, Specialty and Hospital BU and Vaccines BU.
* **COVID specific analysis:**
  + <BB> Partnered with ZS to continue from last year and complete COVID period promotional impacts (HCP personal and non-personal programs) for Gardasil, Pneumovax, Januvia, Steglatro, Bridion and Nexplanon.
* **Coupon / EVouchers (Investment informed ~$100MM+)** <DZ, SM>**:**
  + RShiny based Coupon Design & Analysis Tool is in production (highly productive)
  + **New:** Gefapixant Coupon/EVoucher/Denial Conversion analysis & strategy
  + Januvia Coupon / EV analysis done after few years***.*** *Potential* ***$18MM savings in 2022 by stopping EV***
  + Verquo - 2022 Coupon spend forecasts
* **CTAP / NBE / CHP:** 
  + **CTAP:** <AD, SM> Analysis and identification of key tags related attributes that drives higher engagements using several Machine Learning models such as Elastic Net, Random Forest, Neural Nets etc.
  + **NBE:** <BB, AS> Continuous support for several products on Max Touch Points, CEI inputs, Method revisions etc.
    - Brands: Verquo, Daibetes, Bridion, Isentress, Pifeltro/Delstrigo, Three Ped Vaccines<AS>
  + **CHP:** <SM, AD>Ongoing consulting with ZS on methods and in the process of in-depth review of CHP impact to engagement.
* **Intern:**
  + <BB, AS> One intern. Worked on Keytruda Indication level promo analysis on modeling of specific clusters (CART, K-Means etc.). Objective is to see if any clusters stand out as measurable for certain non-personal promotions.
  + Continuing as consultant with Mike Defazio’s group.
* **Hiring and Consultants Management:**
  + Hired Alex DaSilva – previous intern and PhD candidate.
  + Hired Mike – another PhD candidate and intern.
  + <SM, BB, Team> Contractors – Structured and managed a team of contractors (~10 consultants) to efficiently support the heavy workload and vacancies during this year.
  + **Developed New Team support structure and organization with Datazymes**
    - *Very effective and has* ***been KEY TO COMPLETE MANY OF THE PROJECTS*** *this year.*
* **Tool Developments (with Datazymes support):**
  + Campaign planning tool based on sales impacts is developed and used in the planning of Gardasil Adults DET campaigns. Phase 2 is planned.
  + Helped develop and obtained T/C tool from Datazymes.
* **Personal Development<SM>:**
  + UPenn Digital Marketing Boot Camp – 4 months intensive learning program covering deep dive into designing, implementing, and measuring digital marketing using paid search, website organic search & search engine optimization, display, social media.
  + Executive Communications coaching - one on one coaching.
  + Python, Dataiku trainings.
* **People Development:**
  + Promoted Arun Sinhmar to Senior Specialist.
  + Ambika was provided cross functional training with Contract Optimization team.
  + Exposed and expanded responsibilities of all team members to wide varieties of projects and stimulated interest and engagement.
  + Every team member takes on innovation projects to further enhance skills and solve new types of business issues for Merck.
  + Implemented Agile type way of working for multiple projects (MMix, IPF).