# **Justin Yu**

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## **Summary**

I am a life sciences researcher with a passion for working with others to solve unique and difficult problems, finding ways to leverage data that challenge the norm, and developing products that directly meet the needs of stakeholders while generating insights for future research.

- Highly competent in leading health economics and outcomes research (HEOR) initiatives and cross-functional teams to support product development, access and reimbursement, and pre- and post-launch success with experiences in ophthalmology, neuroscience, oncology, cardiovascular, and women's health therapeutic areas
- Proven success in executing non-traditional ideas for integrating science and technology to develop solutions for internal and external stakeholders: dynamic dashboard for external payer engagements based on real-time data, patient-level data visualization, dynamic field tools, economic models that highlight clinical and humanistic product value
- Proven success in core HEOR activities including database analyses, systematic reviews, network meta-analyses, cost-effectiveness analyses, budget-impact models, product value story development, and identification of metrics for risk-sharing arrangements
- Highly experienced in product strategy development; developed best practices for Market Access/Medical Account Management/HEOR co-creation of field tools at Novartis
- Database experience: American Academy of Ophthalmology IRIS® (Intelligent Research in Sight) Registry, Komodo Healthcare Map, IQVIA Open Source, IBM® MarketScan® Commercial and Medicare Supplemental, Vestrum Health, USRetina, Optum Clinformatics® Data Mart, IBM® MarketScan® Health and Productivity Management

#### **Education**

#### University of Washington (Seattle, WA)

2014 - 2015

Master of Science in Health Economics and Outcomes Research

#### **University of Southern California (Los Angeles, CA)**

2007 - 2014

- Doctor of Pharmacy, 2014
- Bachelor of Arts in Biological Sciences, 2010

# **Professional Experience**

#### **Self-employed**

Jan. 2021 – present

Pharmaceutical industry consultant

#### **Novartis Pharmaceuticals Corporation (East Hanover, NJ)**

Jul. 2018 – Jan. 2021

- Associate Director, US Health Economics and Outcomes Research, Ophthalmology
  - o Product lead, brolucizumab-dbll (BEOVU®) for neovascular age-related macular degeneration
  - Supported one of Novartis' most successful 2019 launches (BEOVU®)

## Allergan plc. (Irvine, CA)

Apr. 2016 – Jul. 2018

- Manager/Senior Manager, Global Health Economics and Outcomes Research
  - o Product lead, atogepant for migraine (pipeline)
  - o Product lead, onabotulinumtoxinA (BOTOX®) for spasticity and movement disorders (marketed); product co-lead, BOTOX® for chronic migraine (marketed)
  - o Mentored one of two 2017 AMCP/Allergan summer interns
  - eyeforpharma Philadelphia (2018) North American finalist for Most Valuable HCP Initiative: Development of a claims-based algorithm for use in migraine patients to identify potentially undiagnosed chronic migraine patients

## **Journal Articles**

## **Ophthalmology**

• Khanani AM, Zarbin MA, Barakat MR, et al. Safety outcomes of brolucizumab in neovascular age-related macular degeneration: results from the IRIS Registry and Komodo Healthcare Map. *JAMA Ophthalmol*. 2021. doi:10.1001/jamaophthalmol.2021.4585.

#### Neuroscience

Pavlovic JM, <u>Yu JS</u>, Silberstein SD, et al. Development of a claims-based algorithm to identify potentially undiagnosed chronic migraine patients. *Cephalalgia*. 2019 Apr;39(4):465-476.

#### Women's Health

- Law A, <u>Yu JS</u>, Lin W, Lynen R, Lin J. Evaluation of hospitalization costs and associated factors among maternity stays involving low-risk and moderate- to high-risk childbirths in the United States. *Hosp Pract*. 2017 Dec;45(5):230-237.
- Law A, Yu JS, Wang W, Lynen R. Trends and regional variations in provision of contraception methods in a commercially-insured population in the US based on nationally proposed measures. *Contraception*. 2017 Sept;96(3):175-182.

## **Risk-sharing Arrangements**

• Yu JS, Chin L, Oh J, Farias J. Performance-based risk-sharing arrangements for pharmaceutical products in the United States: a systematic review. *J Manag Care Spec Phar*. 2017 Oct;23(10):1028-1040.

#### Cardiovascular Disease

 Heresi GA, Platt DM, Wang W, Divers CH, Joish VN, Teal SA, <u>Yu JS</u>. Healthcare burden of pulmonary hypertension owing to lung disease and/or hypoxia. *BMC Pulm Med*. 2017 Apr 11;17(58):1-10.

## **Oncology**

- Latremouille-Viau D, Chang J, Guerin A, Shi S, Wang E, <u>Yu J</u>, Ngai C. The economic burden of common adverse events associated with metastatic colorectal cancer treatment in the United States. *J Med Econ.* 2017 Jan;20(1):54-62.
- Yu JS, Hansen RN, Valderrama A, Carlson JJ. Indirect costs and workplace productivity loss associated with non-Hodgkin lymphoma. *Leuk Lymphoma*. 2016 Nov;57(11):2636-2643.

# **Congress Presentations**

#### **Podium Presentations**

## **Ophthalmology**

MacCumber M, <u>Yu JS</u>, Sagkriotis A, et al. Injection intervals in treatment-naïve neovascular AMD patients who received anti-VEGF agents: an analysis of the IRIS® Registry. Oral presentation at: Retina Society Annual Meeting; September 11-15, 2019; London, UK.

#### Neuroscience

- Kollewe K, Antonakakis A, Kiszka M, Sommer K, Yu JS. Healthcare resource utilization in patients treated with onabotulinumtoxinA for chronic migraine: the REPOSE study. Oral presentation at: Congress of the International Headache Society (IHC) Annual Meeting; September 5-8, 2019; Dublin, Ireland.
- Kollewe K, Antonakakis A, Kiszka M, Sommer K, Yu JS. Reduction in healthcare resource utilization in patients treated with onabotulinumtoxinA for chronic migraine: results from the REPOSE study. Oral presentation at: American Academy of Neurology (AAN) Annual Meeting; May 4-10, 2019; Philadelphia, PA.
- Yu JS, Pavlovic JM, Silberstein S, et al. Development of a claims-based algorithm for use in patients with migraine to identify potentially undiagnosed chronic migraine patients (North American finalist for Most Valuable HCP initiative). Oral presentation at: eyeforpharma Philadelphia; April 10-11, 2018; Philadelphia, PA.
- Yu JS, Pavlovic JM, Silberstein S, et al. Migraine treatment patterns and opioid use among chronic and episodic migraine patients identified by a clinician-administered semi-structured diagnostic interview. Oral presentation at: Canadian Agency for Drugs and Technologies in Health (CADTH) Symposium; April 15-17, 2018; Halifax, Nova Scotia.

- Pavlovic JM, Yu JS, Silberstein S, et al. Migraine treatment patterns and opioid use among chronic and episodic migraine patients identified by a clinician-administered semi-structured diagnostic interview. Oral presentation at: AAN Annual Meeting; April 21-27, 2018; Los Angeles, CA.
- Yu JS, Pavlovic JM, Silberstein S, et al. Evaluation of the Identify Chronic Migraine (ID-CM) screener in a large medical group. Oral presentation at: AAN Annual Meeting; April 21-27, 2018; Los Angeles, CA.
- Pavlovic JM, <u>Yu JS</u>, Silberstein S, et al. Development of a claims-based algorithm for use in patients with migraine to identify potentially undiagnosed chronic migraine patients. Oral presentation at: American Headache Society (AHS) Annual Scientific Meeting; June 8-11, 2017; Boston, MA.

#### **Posters**

### **Ophthalmology**

- MacCumber M, Yu JS, Sagkriotis A, et al. Injection intervals in treatment-naïve neovascular AMD patients who received anti-VEGF agents: an analysis of the IRIS® Registry. Poster presented at: American Academy of Ophthalmology (AAO) 2019; October 12-15, 2019; San Francisco, CA.
- Singh RP, Yu JS, B G, et al. Real-world treatment patterns in patients with neovascular age-related macular degeneration. Poster presented at: Academy of Managed Care Pharmacy (AMCP) Nexus; October 29-November 1, 2019; National Harbor, MD.

#### Neuroscience

- Pavlovic JM, Yu JS, Silberstein SD, et al. Evaluation of the 6-item Identify Chronic Migraine (ID-CM) screener in a large medical group. Poster presented at: Congress of the International Headache Society (IHC) Annual Meeting; September 5-8, 2019; Dublin, Ireland.
- Marcus SC, Shewale AS, Young WB, Yu JS, et al. Undiagnosed chronic migraine is associated with higher economic burden compared with diagnosed chronic migraine: results from a claims-based retrospective study. Poster presented at: AAN Annual Meeting; May 4-10, 2019; Philadelphia, PA.
- Pavlovic JM, <u>Yu JS</u>, Silberstein SD, et al. Economic burden, migraine treatment patterns, and opioid utilization among potentially undiagnosed chronic migraine, diagnosed chronic migraine, and diagnosed episodic migraine patients in a large medical group. Poster presented at: AMCP Nexus; October 22-25, 2018; Orlando, FL.
- Pavlovic JM, <u>Yu JS</u>, Silberstein SD, et al. Evaluation of the 6-item Identify Chronic Migraine (ID-CM) screener in a large medical Ggroup. Poster presented at: 17<sup>th</sup> Migraine Trust International Symposium (MTIS); September 6-9, 2018; London, United Kingdom.
- Cala M, Graham CA, Lipton RB, Lyn N, Dodick DW, Burk C, Yu JS, et al. The Activity Impairment in Migraine-Diary (AIM-D): a novel migraine-specific patient-reported outcome measure to assess functioning based on activity impairment in episodic and chronic migraine patients. Poster presented at: 17<sup>th</sup> MTIS; September 6-9, 2018; London, United Kingdom.

- Marcus S, Shewale AR, Doshi JA, Young W, Yu JS, et al. Economic burden of diagnosed chronic migraine and diagnosed episodic migraine patients in a large US health insurer's population. Poster presented at: International Society for Pharmacoeconomics and Outcomes Research (ISPOR) Annual International Meeting; May 19-23, 2018; Baltimore, MD.
- Marcus S, Shewale AR, Doshi JA, Young W, <u>Yu JS</u>, et al. Economic burden of diagnosed chronic migraine and episodic migraine in a commercially insured population. Poster presented at: AMCP Annual Meeting; April 23-26, 2018; Boston, MA.
- Marcus S, Shewale AR, Young W, Yu JS, et al. Economic burden of diagnosed chronic migraine and potentially undiagnosed chronic migraine in a commercially insured population. Poster presented at: AMCP Annual Meeting; April 23-26, 2018; Boston, MA.
- Yu JS, Durden E, Young WB, et al. Productivity loss and indirect costs of chronic migraine and episodic migraine in a commercially-insured population. Poster presented at: AAN Annual Meeting; April 21-27, 2018; Los Angeles, CA.
- Pavlovic JM, <u>Yu JS</u>, Silberstein S, et al. Development of a claims-based algorithm for use in patients with migraine to identify potentially undiagnosed chronic migraine patients.
  Poster presented at: AAN Annual Meeting; April 21-27, 2018; Los Angeles, CA.
- Pavlovic JM, <u>Yu JS</u>, Silberstein S, et al. Development of a claims-based algorithm for use in patients with migraine to identify potentially undiagnosed chronic migraine patients. Poster presented at: European Headache Federation (EHF) Congress; September 28-30, 2018; Rome, Italy.
- Pavlovic JM, Yu JS, Silberstein S, et al. Development of a claims-based algorithm for use in patients with migraine to identify potentially undiagnosed chronic migraine patients. Poster presented at: AMCP Nexus; October 16-19, 2017; Dallas, TX.
- Yu JS, Pavlovic JM, Silberstein S, et al. Migraine treatment patterns and opioid use among chronic and episodic migraine patients identified by a clinician-administered semi-structured diagnostic interview. Poster presented at: AMCP Nexus; October 16-19, 2017; Dallas, TX.
- Nguyen KL, Yu JS, Pavlovic JM, et al. Acute treatment optimization in migraine patients: results from a large medical group. Poster presented at: AMCP Nexus; October 16-19, 2017; Dallas, TX.
- Yu JS, Polson M, Young W, et al. Direct costs of chronic migraine and episodic migraine in a commercially-insured population. Poster presented at: AMCP Nexus; October 16-19, 2017; Dallas, TX.
- Yu JS, Pavlovic JM, Silberstein S, et al. Evaluation of the Identify Chronic Migraine (ID-CM) screener in an accountable care organization. Poster presented at: IHC; September 7-10, 2017; Vancouver, British Columbia.
- Yu JS, Pavlovic JM, Silberstein S, et al. Migraine treatment patterns and opioid use among chronic and episodic migraine patients identified by a clinician-administered semi-structured diagnostic interview. Poster presented at: IHC; September 7-10, 2017; Vancouver, British Columbia.

 Pavlovic JM, <u>Yu JS</u>, Silberstein S, et al. Patterns of chronic migraine diagnosis among patients with migraine in an accountable care organization. Poster presented at: AHS Annual Scientific Meeting; June 8-11, 2017; Boston, MA.

## **Opioids**

• Yu JS, Chin LM. Systematic review of predictive models for opioid abuse. Poster presented at: AMCP Nexus; October 16-19, 2017; Dallas, TX.

### **Risk-sharing Arrangements**

• Yu JS, Chin L, Oh J, Farias J. Systematic review of performance-based risk-sharing arrangements for pharmaceutical products in the United States. Poster presented at: AMCP Annual Meeting; March 27-30, 2017; Denver, CO.

#### Cardiovascular Disease

• Chin L, <u>Yu J</u>, Devine B. Comparative effectiveness of agents used as monotherapy for the treatment of pulmonary arterial hypertension: a systematic literature review and network meta-analysis. Poster presented at: American Society of Health-System Pharmacists Midyear Clinical Meeting; December 4-8, 2016; Las Vegas, NV.

### **Oncology**

- Latremouille-Viau D, Chang J, Shi S, Wang E, Yu J, Ngai C. Economic burden of hematological adverse events (AEs) associated with metastatic colorectal cancer (mCRC) treatment in the United States (US). Poster presented at: American Society of Clinical Oncology (ASCO) Annual Meeting; June 3-7, 2016; Chicago, IL.
- Wang E, <u>Yu J</u>, Chang J, Sarnes E, Shields K. Evaluating "value" in metastatic colorectal cancer (mCRC) treatments: trends in the evidence. Poster presented at: ISPOR Annual International Meeting; May 21-25, 2016; Washington, DC.
- Yu JS, Hansen RN, Valderrama A, Carlson JJ. Indirect costs and workplace productivity loss associated with non-Hodgkin lymphoma. Poster presented at: AMCP Annual Meeting; April 19-22, 2016; San Francisco, CA.
- Latremouille-Viau D, Chang J, Shi S, Wang E, Yu J, Ngai C. Economic burden of common adverse events (AEs) associated with metastatic colorectal cancer (mCRC) treatment in the United States (US). ASCO Quality Care Symposium; February 26-27, 2016; Phoenix, AZ.
- Yu JS, Seal B, Carlson JJ. Idelalisib plus rituximab versus placebo plus rituximab for relapsed chronic lymphocytic leukemia: a cost-effectiveness analysis. Poster presented at: ISPOR Annual International Meeting; May 16-20, 2015; Philadelphia, PA.
- Yu JS, Seal B, Carlson JJ. The costs of cancer-related absenteeism: a review of the literature. Poster presented at: ISPOR Annual International Meeting; May 16-20, 2015; Philadelphia, PA.

# **Fellowship Experience**

# University of Washington/Bayer HealthCare Post-Doctoral Fellowship

2014 - 2016

## Year 1 University of Washington (Seattle, WA)

- Thesis: Indirect costs and workplace productivity loss associated with non-Hodgkin lymphoma: a retrospective database analysis
- Idelalisib plus rituximab versus rituximab alone for relapsed chronic lymphocytic leukemia: a cost-effectiveness analysis
- The costs of cancer-related absenteeism: a review of the literature
- Utility values for non-Hodgkin lymphoma: a review of the literature

## Year 2 | Bayer HealthCare Pharmaceuticals, Inc. (Whippany, NJ)

- Provided HEOR support across cardiopulmonary (riociguat, pipeline product for heart failure), oncology (radium-223, regorafenib, pipeline product for non-Hodgkin lymphoma), and women's healthcare (levonorgestrel-releasing intrauterine systems) therapeutic areas for products at various lifecycle stages
- Developed concept sheets, protocols, and statistical analysis plans for observational studies
- Developed/updated global value dossiers, value communication toolkits, value messages, value slide decks, and objection handlers

# **Pharmacy Work Experience**

# Veterans Affairs Long Beach Healthcare System (Long Beach, CA) Summer 2012 & 2013

- Veterans Administration Learning Opportunities Residency (VALOR) Intern
  - Worked in the anemia clinic, diabetes clinic, cholesterol clinic, hepatitis C clinic, anticoagulation clinic, and long-term care facility

#### Long Beach Memorial Medical Center (Long Beach, CA)

2011-2014

- Intern Pharmacist
  - o Performed medication monitoring and dosing, counseled on warfarin, converted medications from intravenous (IV) to oral, created IV solutions, filled prescriptions

# **Honors and Awards**

#### **Novartis US CDMA Award for People & Culture**

Feb. 2020

- Award for promoting a culture of simplicity and external focus in US CDMA
- Awarded to up to 10 individuals in US CDMA each year

## **Novartis US CDMA Award for Values & Behaviors**

Feb. 2019

- Awarded for serving as a role model for at least one of the Novartis Values & Behaviors
- Awarded to up to 10 individuals in US CDMA each year

## Allergan Award for Excellence

Oct. 2017

- Leadership award
- Awarded by Global HEOR to only two individuals in Global HEOR in 2017

# Allergan Award for Excellence

Sept. 2017

- Leadership award
- Awarded by US Managed Markets to only two individuals in Global HEOR in 2017