- **Name:** Alexander Drilon
- **Current Position & Affiliation:** Chief, Early Drug Development. Memorial Sloan Kettering Cancer Center
- **Country:** USA

• Educational Background:

INSTITUTION AND LOCATION	DEGREE/TITLE	Completion Date	FIELD OF STUDY
University of the Philippines, Philippines	B.S.	06/95-03/99	Biology
University of the Philippines, Philippines	M.D.	06/99-05/04	Medicine
St. Luke's Roosevelt, Columbia University, NY	Resident	07/06-06/09	Internal Medicine
Memorial Sloan-Kettering Cancer Center, NY	Assistant Chief Resident	02/09-06/09	Medicine
St. Luke's Roosevelt, Columbia University NY	Chief Resident	07/09-06/10	Medicine
Weill Cornell Medical College, NY	Fellow	07/10-06/13	Medicine
Memorial Sloan-Kettering Cancer Center, NY	Fellow	07/10-06/13	Medical Oncology

• Professional Experience:

Positions and Employment

2006-2007	Intern	Internal Medicine	St. Luke's Roosevelt, Columbia University, NY
2007-2009	Resident	Internal Medicine	St. Luke's Roosevelt, Columbia University, NY
2009-2009	Assistant Chief Resident	Medicine	Memorial Sloan Kettering Cancer Center, NY
2009-2010	Chief Resident	Internal Medicine	St. Luke's Roosevelt, Columbia University, NY
2010-2013	Fellow	Medicine	Weill Cornell Medical College, NY, NY
2010-2013	Fellow	Medical Oncology	Memorial Sloan Kettering Cancer Center, NY
2013-2013	Fellow	Investigational Drug Branch	CTEP, National Cancer Institute, Bethesda, MD
2013-2013	Instructor	Medicine	Weill Cornell Medical College, New York, NY
2013-2018	Assistant Attending	Medicine, Oncology	Memorial Sloan Kettering Cancer Center, NY
2016-2018	Clinical Director	Early Drug Development Service	Memorial Sloan Kettering Cancer Center, NY

2016-2018	Research Director	Early Drug Development Service	Memorial Sloan Kettering Cancer Center, NY
2018-	Associate Attending	Medicine, Oncology	Memorial Sloan Kettering Cancer Center, NY
2018-	Associate Professor	Medicine	Weill Cornell Medical College, New York, NY
2020-	Chief	Early Drug Development Service	Memorial Sloan Kettering Cancer Center, NY

Honors and Fellowships

1999	Oblation Scholar	University of the Philippines
1999	*Magna Cum Laude*	Bachelor of Science in Biology, Univ. of the Philippines
2004	Most Outstanding Medical Graduate	University of the Philippines College of Medicine
2004	*Cum Laude*	Doctor of Medicine, University of the Philippines
2004	Ten Outstanding Students of the Philippines	Republic of the Philippines
2009	Outstanding Senior Resident	St. Luke's Roosevelt, Columbia University
2012	John Mendelssohn House Staff Teaching Award	Memorial Sloan Kettering Cancer Center (MSKCC)
2012	Fellowship Award	International Association for the Study of Lung Cancer (IASLC)
2012	Young Investigator Award	Conquer Cancer Foundation (CCF) /American Society of Clinical Oncology (ASCO)
2013	Young Investigator Award	National Lung Cancer Partnership (NLCP)
2014	Career Development Award	Conquer Cancer Foundation (CCF)/ American Society of Clinical Oncology (ASCO)
2015	Research Grant Award	Lung Cancer Research Foundation (LCRF)
2016	House Staff Teaching Award	Memorial Sloan Kettering Cancer Center
2018	Research Recognition Award	Division of Solid Tumor Oncology, MSKCC

• Professional Organizations:

Organization	**Dates**
Phi Sigma Society International Biologic Honors Society	1999-2004
Phi Kappa Phi International Honors Society	1999-2004
American Society of Hematology (ASH)	2010-2013
American Society of Clinical Oncology (ASCO)	2010-present
International Society of Geriatric Oncology (SIOG)	2011-2015
International Association for the Study of Lung Cancer (IASLC)	2011-present
American Association for Cancer Research (AACR)	2012-present

• Main Scientific Publications:

1. ***NTRK*-rearranged cancers**. I was global lead accruer to the phase 1/2 studies that established the activity of larotrectinib and entrectinib (NAVIGATE and STARTRK-1/2). These programs resulted in US FDA Breakthrough Designation and Accelerated US FDA approval for both drugs, the Japanese Ministry of Health, Labour and Welfare approval for entrectinib for adult and pediatric patients with *NTRK* fusion-

positive cancers, as well as health care agency approvals in Canada, Brazil, and Europe. My team was the first to describe *NTRK* solvent front and xDFG mediated resistance to first-generation TRK inhibition, and the first to treat and achieve responses in patients with solvent front mutations with the next generation TRK inhibitors selitrectinib and repotrectinib. We were also the first to describe off-target/bypass resistance and treat with combination TRK-MET/RAF therapy in patients with *NTRK* fusion-positive cancers that progressed on larotrectinib/entrectinib.

a. **Drilon A**, Laetsch TW, Kummar S, DuBois SG, Lassen UN, Demetri GD, et al, Hong DS, Hyman DM. Efficacy of Larotrectinib in TRK Fusion-Positive Cancers in Adults and Children. N Engl J Med. 2018 Feb 22;378(8):731-739. PMID: 29466156
b. **[Senior Author]** Hong DS, DuBois SG, Kummar S, Farago AF, Albert CM, Rohrberg KS, van Tilburg CM, Nagasubramanian R, Berlin JD, Federman N, Mascarenhas L, Geoerger B, Dowlati A, Pappo AS, Bielack S, Doz F, McDermott R, Patel JD, Schilder RJ, Tahara M, Pfister SM, Witt O, Ladanyi M, Rudzinski ER, Nanda S, Childs BH, Laetsch TW, Hyman DM, **Drilon A**. Larotrectinib in patients with TRK fusion-positive solid tumours: a pooled analysis of three phase 1/2 clinical trials. Lancet Oncol. 2020 Apr;21(4):531-540.
c. **Drilon A**, Nagasubramanian R, Blake JF, Ku N, Tuch BB, Ebata K, Smith S, et al, Rothenberg SM, Hyman DM. A Next-Generation TRK Kinase Inhibitor Overcomes Acquired Resistance to Prior TRK Kinase Inhibition in Patients with TRK Fusion-Positive Solid Tumors. Cancer Discov. 2017 Sep;7(9):963-972. doi: 10.1158/2159-8290.CD-17-0507. Epub 2017 Jun 3. PMID: 28578312
d. **Drilon A**, Ou SI, Cho BC, Kim DW, Lee J, Lin JJ, Zhu VW, Ahn MJ, Camidge DR, et al, Cui JJ, Shaw AT. Repotrectinib (TPX-0005) Is a Next-Generation ROS1/TRK/ALK Inhibitor That Potently Inhibits ROS1/TRK/ALK Solvent- Front Mutations. Cancer Discov. 2018 Oct;8(10):1227-1236. doi: 10.1158/2159-8290.CD-18-0484. Epub 2018 Aug 9.

2. *RET*-rearranged and *RET*-mutant cancers. I was the first to design and mount a prospective trial of a RET inhibitor (cabozantinib) for patients with *RET*-rearranged lung cancers. This data resulted in the eventual inclusion of cabozantinib in the NCCN Guidelines for Non-Small Cell Lung Cancers. I am the lead global principal investigator for LIBRETTO-001, a phase 1/2 study of selpercatinib for patients with RET-altered cancers. This resulted in the US FDA granting Breakthrough Designation and Accelerated Approval to selpercatinib for lung and thyroid cancers that harbor these alterations; approval/drug designation subsequently extended to the EU, Switzerland, UK, Canada and EUA. I started the first global registry for patients with RET-dependent lung cancers. My team was the first to identify *MET* amplification as a recurring bypass resistance mechanism to selpercatinib; we were the first to treat patients with the combination of RET-MET inhibition.

a. **Drilon A**, Oxnard GR, Tan SWD, Loong HHF, Johnson M, Gainor J, Olek E, Rothhenberg SM, Goto K, Subbiah V. Efficacy of Selpercatinib in RET Fusion-Positive Non-Small-Cell Lung Cancer. N Engl J Med. Aug 2020. PMID: 32846060

b. **Drilon A**, Rekhtman N, Arcila M, Wang L, Ni A, Albano M, Van Voorthuysen M, et al, Ladanyi M, Kris MG. Cabozantinib in patients with advanced RET-rearranged non-small-cell lung cancer: an open-label, single-centre, phase 2, single-arm trial. Lancet Oncol. 2016 Dec;17(12):1653-1660. PMID: 27825636
c. **Drilon A**, Wang L, Hasanovic A, Suehara Y, Lipson D, Stephens P, Ross J, et al, Ladanyi M, Rizvi N. Response to Cabozantinib in patients with RET fusion-positive lung adenocarcinomas. Cancer Discov. 2013 Jun;3(6):630-5. Epub 2013 Mar 26. PMID:23533264
d. **[Senior Author]** Gautschi O, Milia J, Filleron T, Wolf J, Carbone DP, Owen D, et al, Mazières J, **Drilon A**. Targeting RET in Patients With RET-Rearranged Lung Cancers: Results From the Global, Multicenter RET Registry. J Clin Oncol. 2017 May 1;35(13):1403-1410. PMID: 28447912

3. *ROS1*-rearranged cancers. I was lead global accruer to the registrational program of entrectinib (STARTRK) which resulted in the drug's FDA Breakthrough Designation and eventual Accelerated FDA approval. I was part of a group that first identified and described conformational resistance (via D2033N mutation acquisition) to ROS1 inhibition with crizotinib. In addition, we were first to demonstrate clinical proof-of-concept data on the activity of the next-generation ROS1 inhibitor repotrectinib and cabozantinib in on-target resistance. I am global lead of the repotrectinib regulatory program that resulted in US FDA Breakthrough Designation for treatment-naïve ROS1 fusion-positive lung cancers.

a. **Drilon A**, Siena S, Dziadziuszko R, Barlesi F, Krebs MG, Shaw AT, de Braud F, Rolfo C, Ahn MJ, Wolf J, Seto T, Cho BC, Patel MR, Chiu CH, John T, Goto K, Karapetis CS, Arkenau HT, Kim SW, Ohe Y, Li YC, Chae YK, Chung CH, Otterson GA, Murakami H, Lin CC, Tan DSW, Prenen H, Riehl T, Chow-Maneval E, Simmons B, Cui N, Johnson A, Eng S, Wilson TR, Doebele RC. Entrectinib in ROS1 fusion-positive non-small-cell lung cancer: integrated analysis of three phase 1-2 trials. Lancet Oncol. 2019 Dec 11. PMID: 31838015
b. **Drilon A**, Siena S, Ou SI, Patel M, Ahn MJ, Lee J, Bauer TM, Farago AF, Wheler JJ, Liu SV, Doebele R, Giannetta L, Cerea G, Marrapese G, Schirru M, Amatu A, Bencardino K, Palmeri L, Sartore-Bianchi A, Vanzulli A, et al, Chow-Maneval E, Hornby Z, Multani PS, Shaw AT, De Braud FG. Safety and Antitumor Activity of the Multi-Targeted Pan-TRK, ROS1, and ALK Inhibitor Entrectinib (RXDX-101): Combined Results from Two Phase 1 Trials (ALKA-372-001 and STARTRK-1). Cancer Discov**.** 2017 Apr;7(4):400-409. doi: 10.1158/2159-8290.CD-16-1237. Epub 2017 Feb 9. PMID: 28183697; PMCID: PMC5380583.
c. **Drilon A**, Ou SI, Cho BC, Kim DW, Lee J, Lin JJ, Zhu VW, Ahn MJ, Camidge DR, et al, Cui JJ, Shaw AT. Repotrectinib (TPX-0005) Is a Next-Generation ROS1/TRK/ALK Inhibitor That Potently Inhibits ROS1/TRK/ALK Solvent- Front Mutations. Cancer Discov. 2018 Oct;8(10):1227-1236. doi: 10.1158/2159-8290.CD-18-0484. Epub 2018 Aug 9. PMID: 30093503
d. **Drilon A**, Somwar R, Wagner JP, Vellore NA, Eide CA, Zabriskie MS, Arcila ME, Hechtman JF, Wang L, Smith RS, Kris MG, Riely GJ, Druker BJ, O'Hare T, Ladanyi M, Davare MA. A novel crizotinib-resistant solvent-front mutation responsive to cabozantinib therapy in a patient with ROS1-rearranged lung cancer. Clin Cancer Res. 2015 Dec 16. PMID: 26673800

4. MET-dependent cancers. I am part of a team that first described the activity of the MET inhibitors crizotinib and cabozantinib in patients with *MET* exon 14-altered advanced lung cancers. More importantly, I was the first to present prospective data on the activity of crizotinib in this genomic subset on the same phase I trial (PROFILE 1001) that launched the eventual approval of the drug for *ALK*- and *ROS1*-rearranged lung cancers. This resulted in the inclusion of crizotinib as a therapy for *MET* exon 14-altered lung cancers in the NCCN Guidelines as well as FDA Breakthrough Designation for this indication. Furthermore, we were the first to describe MET expression via mass spectrometry as a putative prerequisite for MET tyrosine kinase activity in MET exon 14-altered lung cancers.
    a. **Drilon A**. Camidge DR, Ou SI, Clark JW, Socinski MA, Weiss J, Riely GJ, et al, Wilner KD, Paik PK. Antitumor Activity of Crizotinib in Lung Cancers Harboring a MET Exon 14 Alteration. Nat Med. 2020 Jan;26(1):47-51. doi: 10.1038/s41591-019-0716-8. Epub 2020 Jan 13.PMID: 31932802
    b. **[Co-First Author]** Paik PK, **Drilon A**, Yu H, Rekhtman N, Ginsberg MS, Borsu L, Schultz N, Berger MF, Rudin CM, Ladanyi M. Response to MET inhibitors in patients with stage IV lung adenocarcinomas harboring MET mutations causing exon 14 skipping. **Cancer Discov.** 2015 Aug;5(8):842-9. doi: 10.1158/2159-8290.CD-14-1467. Epub 2015 May 13. PMID: 25971939; PMCID: PMC4658654.
    c. **[Senior Author]** Guo R, Offin M, Brannon AR, Chang J, Chow A, Delasos L, Girshman J, Wilkins O, McCarthy CG, Makhnin A, Falcon C, Scott K, Tian Y, Cecchi F, Hembrough T, Alex D, Shen R, Benayed R, Li BT, Rudin CM, Kris MG, Arcila ME, Rekhtman N, Paik P, Zehir A**, Drilon A**. *MET* Exon 14-altered Lung Cancers and MET Inhibitor Resistance. **Clin Cancer Res.** 2021 Feb 1;27(3):799-806. doi: 10.1158/1078-0432.CCR-20-2861. Epub 2020 Nov 10. PMID: 33172896; PMCID: PMC7854494.

Complete List of Publish Works: https://www.ncbi.nlm.nih.gov/pubmed/?term=drilon