COLUMBIA UNIVERSITY
College of Physicians and Surgeons
In affiliation with NewYork-Presbyterian Hospital

Department of Surgery
Human Resources & Academic Affairs
21 Audubon Ave, Suite 209
New York, NY 10032

www.columbiasurgery.org

Job Description – Postdoctoral Research Scientist

Position Summary:

The Thomsen Lab is looking to recruit a Postdoctoral Research Scientist candidate for our newly initiated research program centered around compartmentalized G protein signaling by internalized G protein-coupled receptors (GPCRs) in the Department of Surgery, Columbia University Medical Center. The main objective of the research program is to understand the mechanistic basis behind compartmentalized GPCR signaling at a near-atomic level, and to study its direct implications on a variety of physiological and pathophysiological conditions including cancer metastasis, nociception, and salt/water homeostasis.

The primary project of the successful candidate will be to investigate the mechanism and contribution of compartmentalized chemokine receptor signaling to cell migration and metastasis of melanoma cells. The project will involve work with primary metastatic tissue isolated from patients as well as melanoma cell lines where an in-depth mechanism of cell migration is sought through usage of cryo-electron tomography and proteomics approaches. The insights learned from this project will be used to design future drug candidates to combat metastatic melanoma.

In addition, it is also expected that the applicant will participate in related secondary projects and collaborative projects within and/or outside our laboratory.

Columbia University is an Equal Opportunity and Affirmative Action Employer.

Requirements:

We are looking for candidates with a Ph.D. and/or M.D. degree and experience in electron microscopy, proteomics, and/or cell biology**.** Prior knowledge of GPCR signal transduction is preferred but not essential. We are looking for motivated and creative individuals with a commitment to academic research who can work independently as well as in team-based projects. Good oral and written communication skills are musts.

Minimum Qualifications:

PhD and/or MD in Biomedical Research required.

Preferred Qualifications:

Electron Microscopy: Grid preparation, cryo-EM, cryo-electron tomography, negative stain EM, data processing.
Proteomics: Mass spectroscopy, APEX2, data processing.
Cellular and Molecular Biology: Cell culture, molecular cloning, cell migration assays, cell-based signaling assays, confocal and live cell fluorescence microscopy, genetic manipulation of cell lines by CRISPR and RNAi, etc.

Interested candidates should send a CV, cover letter and contact information for 3 references to Alex R. B. Thomsen, PhD, Assistant Professor: art2174@cumc.columbia.edu

Recent Related Publications:

Thomsen ARB, Jensen DJ, Hicks GA, Bunnett NW (2018). Therapeutic Targeting of Endosomal GPCRs. *Trends Pharmacol Sci* 39:879-91. Review.

Cahill III TJ, Thomsen ARB, Tarrasch JT, Plouffe B, Nguyen A, Yang F, Bassoni D, Gavino B, Lamerdin J, Triest S, Huang L-Y, Shukla A, Kahsai AW, Berger B, Little IV J, Antar A, Blanc A, Qu C-X, Chen X, Kawakami K, Inoue A, Aoki J, Steyeart J, Sun J-P, Bouvier M, Skiniotis G, Lefkowitz RJ (2017). Distinct Conformations of GPCR–β-Arrestin Complexes Mediate Desensitization, Signaling and Endocytosis. *Proc Natl Acad Sci USA* 114:2562-67.

Thomsen ARB, Plouffe B, Cahill III TJ, Shukla AK, Tarrasch JT, Dosey AM, Kahsai AW, Strachan RT, Pani B, Mahoney JP, Huang L-Y, Breton B, Heydenreich FM, Sunahara RK, Skiniotis G, Bouvier M, Lefkowitz RJ (2016). GPCR–G Protein–β-arrestin Super-Complex mediates Sustained G Protein Signaling. *Cell* 166:907-19.