

# Seonyoung (Shannon) Park

• City Pl, New Jersey 07020

• sp3804@cumc.columbia.edu

• 917-715-7305

## • EDUCATION

---

**Columbia University Mailman School of Public Health MPH student**  
Major: Environmental Health Sciences, Specialization: Applied Biostatistics

Expected, May 2021

**UNIST (Ulsan National Institute of Science and Technology), Korea**  
Major: Chemistry, Minor: Nano Material Science

March 2014 - February 2019

## • RESEARCH

---

**Columbia University in the City of New York**  
*Research Internship at Center for Children's Environmental Health. Prof. Julie Herbstman*

March 2020 - Present

- Project: Study the association between prenatal and early child exposure to polybrominated diphenyl ether (PBDE)—a commonly used flame retardant—on executive function using the Conners' Continuous Performance Test assessed during adolescence.  
- Data Mapping of Environmental Influence on Child Health Outcomes (ECHO) by compiling the codebooks to be completed into files that can be accessed remotely.

**Ulsan National Institute of Science and Technology**  
*Research Internship at IBS Center for soft and living matter. Prof. John T. King*

March 2018 - December 2018

- Project: Liquid-Liquid Phase Separation of Histone Proteins in Cells: Role in Chromatin Organization  
Liquid-liquid phase separation (LLPS) of proteins and nucleic acids has emerged as an important phenomenon in membraneless intracellular organization. In this project, it is demonstrated linker histone H1 condenses into liquid-like droplets in the nuclei of HeLa cells. Verified the phase diagram of H1 with nucleosome is invariant to the nucleosome lengths and through FRET analysis, it is demonstrated nucleosome core particle maintains its structural integrity inside the droplets.

**Seoul National University**  
*Research Internship at Bioinorganic laboratory. Prof. Woon Ju Song*

January 2018 - March 2018

- Project: Metal bipyridine binding to construct self-assembled protein structure.  
Unnatural amino acid possessing bipyridine molecule could be incorporated into proteins providing a metal binding site. Protein self-assembly by reacting with metal broadens various medical applications such as intra-cellular imaging, drug delivery, etc.

**Swiss Federal Institute of Technology Lausanne**  
*Research Internship at Laboratory of Organometallic and Medicinal Chemistry. Prof. Paul Dyson.*

July 2016 - August 2016

- Project: Metal oxide nanoparticles as recyclable catalyst for N-methylation and N-formylation using Carbon Dioxide.  
Various metal oxides, such as zinc oxide and silicon oxide, are valuable heterogeneous catalyst in that they produce high yield of desired product and are easy to separate thus recyclable. In this project metal oxide was used to catalyze N-methylation, which is basic unit for various biomolecules, through reaction of amine group with carbon dioxide as a carbon source.

## • PUBLICATION

---

**Liquid-Liquid Phase Separation of Histone Proteins in Cells: Role in Chromatin Organization,**  
Park. S<sup>§</sup>, Shakya. A<sup>§</sup>, Rana. N. King. T. J., *Biophysical Journal*, 2019 December 31.

(<sup>§</sup> Equal contribution)

## • SCHOLARSHIP AND AWARDS

---

**2019 Fulbright Graduate Study Award**  
**National Science and Engineering Scholarship, Korea**  
**Academic Scholarship for tuition waived, UNIST**  
**Overseas Studies Scholarship, UNIST**  
**Samsung Dream Class Scholarship**

August 2019 - August 2021  
March 2016 - February 2019  
March 2014 - February 2019  
July 2016 - August 2016  
August 2014 - January 2016

## • ADDITIONAL RELEVANT EXPERIENCE

---

<b>Teaching Assistant, Determinants of Health</b> Prof. Greg Freyer, Environmental Health Sciences at the Columbia University Medical Center	September 2020 - Present
<b>Teaching Assistant, Environmental Chemistry / Risk Assessment &amp; Toxicology</b> Prof. Steven Chillrud, Lamont-Doherty Earth Observatory (LDEO), Earth Institute, Columbia University Prof. Michael Musso, School of International and Public Affairs (SIPA), Columbia University	May 2020 - August 2020
<b>Volunteer Tutor Corps at Columbia, Online Tutor</b> During COVID-19 pandemic, assisted emergency childcare and tutored children in grade K	March 2020 - August 2020
<b>Consulting and Testing Service. Incorporation.</b> <i>Internship for 2019 Community Rights to Know Filling</i> - Assist the annual chemical inventory and safety fillings of companies and commercial buildings	January 2020 - February 2020
<b>North Korea defectors &amp; Multicultural students mentoring</b> Supported by Korea Student Aid Foundation (KOSAF)	April 2018 - February 2019
<b>Teaching Assistant, History of Contemporary World</b> Prof. Ju Young Lee, Division of General Study, UNIST	August 2016 - January 2017
<b>Samsung Dream Class, English study mentor</b> Supported by SAMSUNG Welfare Foundation	August 2014 - January 2016

## • SKILLS AND TECHNIQUES

---

**Programming Languages:** R, SAS, C++

## • SPECIAL TRAINING

---

<b>Official Developmental Assistance (ODA) Education</b> Supported by Korea International Cooperation Agency - To understand the major international cooperation fields (education, public health, governance, and agriculture) through case study, discuss current/expected issues, and suggest the future direction of ODA for the post-COVID era	August 2020
---	-------------

## • GRADUATE COURSEWORK

---

### Fall 2020

BIST P8105	Data Science (R, Github)
BIST P8120	Analysis of Categorical Data (SAS)
EHSC P8312	Principles of Toxicology
EHSC P8317	Frameworks for Environmental Health Policy
EHSC P8390	Advanced Risk Assessment

### Spring 2020

BIST P8100	Applied Regression (SAS)
EHSC P8334	Computational Toxicology (R, EPA's ComTox Chemicals Dashboard)
EHSC P6360	Analysis of Environmental Health Data (R)
EHSC P8321	Introduction of Data Science for Environmental Health (R, Github)
EHSC P8322	Environmental Determinants of Health

### Fall 2019

PUBH P6040	Determinants of Health; Social, Biological, and Environmental impact on public health
PUBH P6031	Research Methods & Application; Quantitative and Qualitative Analysis of public health data
PUBH P6060	Health Systems; Understanding and Comparison of US healthcare system to other countries
PUBH P6070	Global & Developmental Perspectives