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Objectives

To gain comprehensive insight through research lifecycle management, followings are expected to learn in the Professor Soolyeon Cho's lab. at the North Carolina State University;

- Why NCSU's research management is so innovative, and how and what to do in the aspect of research management and technology transfer
- Why sustainability is so important in research, what is the value of sustainability problem-solving through interdisciplinary approach, and how to apply interdisciplinary approach to real world problem
- How to discover valuable research output and outcome, and transfer to industry and the public

Professor Cho is the active board member of KUSCO (Korea – U.S. Science Cooperation Center) as well as the current President of KSEA (Korean-American Scientists and Engineers Association). He has had such a broad and deep understating about research performing and funding environment of both USA and Korea. I truly believe that his research interest on sustainable environment using interdisciplinary approach could help my objectives successfully achieved during one year of a visiting scholar. Also, NCSU, a member of the research triangle, would be a perfect place for experiencing advanced research management practice.

Profile

National research funding professional with 12 years of experience specializing in establishing research promotion policy and strategy, launching new research programs and projects, and research project award management in science and engineering fields, including interdisciplinary research fields. These tasks were completed based on global policy and funding trend research, intensive data and information analysis, and collaborative effort with diverse entities including experts, opinion leaders, government and the public. Research experience with 6.5 years of the

model development for water resources and quality management using genetic algorithm and remote sensing.

Key Skills

- Research policy and strategy establishment in science and engineering fields
- Method development on research project review and management, especially in interdisciplinary research areas
- Data and information analysis: project, paper, patent, policy and strategy
- Research program and project management: launching new programs and projects, review process management, and award management

Professional Experiences

Chief Secretary to the President/Senior Researcher 2019-Present

National Research Foundation of Korea (NRF)

Supporting the Foundation's top leadership, the President Jung-Hye Roe, including in/out house issue handling, the Foundation's strategic plan establishment, schedule management with domestic (government, universities, research institutes and National Assembly) and international counterparts.

Senior Researcher 2017-2019

Policy & Innovation Team, NRF

Established 'the Fourth Comprehensive Plan for the Promotion of Basic Research (2018~2022)' as the person in charge of organizing and managing committees and sub-projects through entire process, and finalizing a report. Established 'the Fourth Science and Technology Basic Plan (2018-2022)' as the designated counterpart who was in charge of managing a challenging and creative research part. Established 'the 4th Basic Plan for Fostering and Supporting Women in STEM' as a committee member. Also, published over 70 reports (NRF CEO Brief, NRF R&D Brief, and NRF Issue Report): stimulating university startup for early-stage researcher, introduction on innovative programs and institutes, research output analysis of NRF and major funding agencies aboard, comparison between domestic and international research funding mechanism. Rated the highest grade, A (top 10%), for 3 years straight in annual performance evaluation.

Researcher 2014-2016

National Strategic Research Development Team, NRF

Established three climate change-related strategies for carbon reduction and utilization, and climate change adaptation in cooperation with the Ministry of Science, ICT and Future Planning:

'the Core Technology Development Strategy in Climate Change Addressing', 'the Strategy for Promoting New Industry and Core Technology in Climate Change Addressing' and 'the Technology Development Roadmap in Climate Change Addressing'. Launching new projects for the Climate Change Addressing Research Program. Awarded for the Minister of Science, ICT and Future Planning's Commendation for contributing to the establishment of strategy to address climate change.

Researcher 2009-2016

Division for ICT·Interdisciplinary Basic Research Promotion, NRF

Managed mainly pre-award process of basic research programs in interdisciplinary research fields: proposal pre-screening, proposal review management, awarded project's research output and outcome management. Launched new research programs and redesign review processes in interdisciplinary fields, and developed the new discipline analysis system. Awarded for the President of NRF's Commendation for contributing to the promotion of basic research, especially in interdisciplinary research. Presented at TEDxSNUSuwon with a title of **The NRF on Convergence – a peek inside the black box**.

Research Assistant 2003-2008

Department of Civil & Environmental Engineering, Old Dominion University

Participated in NSF CAREER Grant (#0238848) with a title of 'Toward Efficient Evolutionary Algorithm Methodologies for Surface Water Systems Management" as a graduate student.

Education

- **Ph.D.** in Civil Engineering, Old Dominion University, VA., USA (2004-2009)
  Dissertation: "Estimation of Spatiotemporal Variation of Water Quality Parameters in Estuaries using Remote Sensing Data and Estuary-specific Characteristics"
- **M.S.** in Civil Engineering, Old Dominion University, VA., USA (2002-2004)
  Thesis: "Performance of Constraint-Handling Techniques Applied to a Genetic Algorithm-Based Watershed Management Model"
- **B.S.** in Environmental Engineering, University of Ulsan, ROK (1995-2001)

Certifications & Memberships

Certifications

- Certification of Completion in PMP Examination Preparation, Global PM Institute (June 29, 2019)

- Certification of Completion in Research Integrity, SRAI (Oct. 31, 2018)
  * SRAI: Society of Research Administrators International
- Certification of Completion in the R&D IP NRF 2015, Washington International Patent Academy (Oct. 26-30, 2015)
- Thomson Innovation Master Analyst Level Certificate, Thomson Reuters Korea IP & Science (Sep. 24, 2014)
- Certification of Completion in Research Law, SRAI (Oct. 26-30, 2013)
- Certification of Participation in 2012 International Cooperative R&D Contract Meeting, SRAI (Dec. 10-14, 2012)
- Engineer-in-Training, National Council of Examiners for Engineering and Survey, VA. (Dec. 15, 2003)

Memberships

- PMP (Project Management Professional) Global and Regional (ROK) Member (2019-2020)
- TBP (Tau Beta Pi Virginia Gamma Chapter, National Engineering Honor Society) Member (2005-Present)
- XE (Chi Epsilon ODU Chapter, National Civil Engineering Honor Society) Marshal (2005), Secretary (2006), Member (2004-Present)
- American Society of Civil Engineers Student Member (2004-2007)
- Korea Technology Innovation Society Life Membership (2013-Present)

Awards & Scholarships

- Outstanding Paper Award in the Korea Contents Association Conference in 2017
  - Title: An Analysis on R&D Competence & efficiency of Korea based on S&T statistics & information
  - Title: Policy for Gender Innovation in Science Research
- Minister of Science, ICT and Future Planning's Commendation (2016)
- The President of NRF's Commendation (2013)
- KSEA– KUSCO Graduate Student Scholarship (2007)
- KSEA Best Technical Presentation Award in KSEA Young Generation Technical and Leadership Conference (2007)
- Second Place Award in SEVA KSEA Conference (2005)
- Academic Excellence Scholarships in University of Ulsan, ROK (2000)
- Exchange Student Scholarships in University of Ulsan, ROK (2000)

Publications & Patents

Journal Papers

1. Park, Munsu; Kim, Haedo; & **Park, Kwisun** (2018). A Study on the Improvement of Auditing System to Increase the Efficiency of University Research. *Journal of Public Audit and Inspection Review*, 31.
2. **Park, Kwisun** (1st and corresponding author); Kim, Haedo; & Jang, Kyeongsu (2018). A Study on the Policy Issues of Basic Research Promotion in Korean Academics. *Journal of Korea Technology Innovation Society*, 21(3).
3. **Park, Kwisun** (1st and corresponding author); Seok, Hyeeun; Park, Jinsu; & Kim, Haedo (2017). Study on Effectiveness of Korea's Basic Research based on S&T Statistics and Information. *Journal of Korea Contents Association*, 17(11).
4. Schwartz, Mathew; **Park, Kwisun** (2nd author); & Lee, Sung-Jong (2016). **Quantitative Definitions of Collaborative Research Fields in Science and Engineering**. *Asian Journal of Innovation and Policy*, 5(3).
5. **Park, Kwisun** (1st and corresponding author); & Yoon, Jaewan (2015). Monitoring for Spatiotemporal Estuarine Chlorophyll Using MODIS and In Situ Characteristics. *Journal of Environmental Engineering*, 141(7).
6. **Park, Kwisun** (1st author); Shin, Suk Kyung; Song, Young Song; Lee, Sung Jong; Lee, Eunkyu; & Cha, Eun Jong (2013). **Developing a Convergence Research Support Framework to Promote Creative and Transformative Basic Research**. *Journal of Korea Contents Association*, 13(12).
7. Lee, Jong-Hyun; Kwon, Sang-Sook; Jung, Dong-Il; Son, Jiho; Cha, Eun-Jong; Yeu, Moo-Song; Lee Sung-Jong; & **Park, Kwisun** (2013). Special Feature: The Cornerstone Project: Establishing the Interministerial Collaborative R&D Support Framework between NRF and KEITI, Korea. *Journal of Korean Society of Environmental Engineers*, 35(8).
8. Seo, Ok-Ee; **Park, Kwisun** (2nd author); Shin, Suk Kyung; Lee, Sung Jong; Rhie, Won Geun; & Lee, Yun Hee (2013). Establishing the Supplementary Quantitative Guidelines for Successful Establishment of NRF Grant Funding Mechanism on Basic Research. *Journal of Korea Technology Innovation Society*, 165(2).
9. **Yu, Kwisun Park** (2009). *Estimation of Spatiotemporal Variation of Water Quality Parameters in Estuaries using Remote Sensing Data and Estuary-specific Characteristics*, Dissertation, Old Dominion University, May, 2009.
10. **Yu, Kwisun Park** (2004). *Performance of Constraint-Handling Techniques Applied to a Genetic Algorithm-Based Watershed Management Model*, Master of Science Thesis, Old Dominion University, August, 2004.

Proceedings

1. **Park, Kwisun**; Kim, Haedo; Ko, Yejun; & Ko, Hyukjin (2019). Survey on Research and Study Difficulties of Early Career Researchers in Science and Engineering Field. Proceedings of the Korea Technology Innovation Society Conference 2019.
2. Chun, Ki Woo; Kim, Haedo; **Park, Kwisun**; & Lee, Keonsoo (2017). A Study on 5 Platform Technology Trends for 4th Industrial Revolution. Proceedings of the Korea Technology Innovation Society Conference 2017.

3. **Park, Kwisun**; Lee, Hyobin; Seok, Hye Eun; Park, Jinseo; Chun, Ki-Woo; & Kim, Haedo (2017). An Analysis on R&D Competence & efficiency of Korea based on S&T statistics & information. Proceedings of the Korea Contents Association Conference 2017.
4. Lee, Hyo-bin; **Park, Kwi-sun**; Park, Jae-sul; Jang, Kyung-su; Sin, Jeong-beom; & Park, Hee-jung (2017). Policy for Gender Innovation in Science Research. Proceedings of the Korea Contents Association Conference 2017.
5. **Park, Kwi-Sun**; An, Ju-Myeong; Seo, Ok-Lee; Heo, Jeong-Eun; & Lee, Jae-Bang (2015). Study on Establishing the Core Technology Development Strategy in Climate Change Addressing. Proceedings of the Korea Technology Innovation Society Conference 2015.
6. **Park, Kwisun**; Lim, Bo-Hye; Lee, Hyoung-Min; Han, Byoung-Jun; & Heo, Jung-Eun (2014). Establishing the Interministerial Collaborative R&D Connectome Framework of NRF. Proceedings of the Korea Technology Innovation Society Conference 2014.
7. **Park, Kwisun**; Shin, Suk Kyung; Cha, Eun-Jong (2012). Shifting the Paradigm for Enhancing NRF's Convergence Research: S&E and H&SS, They are Connected. Proceedings of the Korea Contents Association Conference 2012.
8. **Yu, Kwisun P.**; Muhammad Brenda; & Yoon, Jaewan (2007). Developing a Monitoring Support Model for Chlorophyll a Concentration in the James River Estuary using MODIS Images. Proceedings of the ASCE World Water and Environmental Resources Congress, May 2007.
9. Zhang, Leying; **Yu, Kwisun P.**; & Yoon, Jaewan (2007). Development of Saptiotemporal Source-Sink, Stratified Notrogen Water Quality Model. Proceedings of the ASCE World Water and Environmental Resources Congress, May 2007.
10. **Yu, Kwisun P.** & Yoon, Jaewan (2007). MODIS-based Assessment of Estuarine Chlorophyll a Water Quality Indicator in the Multihaline Reaches of the James River, Virginia. Proceedings of the TUgis Conference, March 2007.
11. **Yu, Kwisun P.** & Harrell, Laura J. (2006). Efficient Strategies for Sampling Uncertain Parameters in a Genetic Algorithm-based Chance-Constrained Watershed Water Quality Management Problem. Proceedings of the ASCE World Water and Environmental Resources Congress, May 2006.
12. **Yu, Kwisun P.**; Zhang, Leying; & Jaewan Yoon (2006). Development of a Source-Sink, Coupled Nitrogen Loading Model for Distributed Nitrogen Sources. Proceedings of the VLWA Virginia Water Conference, March 2006.
13. **Yu, Kwisun P.** & Jaewan Yoon (2006). Comparative Feasibility Study of Moderate Resolution Imaging Spectroradiometer (MODIS) Image-based Chlorophyll a Concentration Estimation Model in the James River Estuary, Virginia. Proceedings of the VLWA Virginia Water Conference, March 2006.
14. **Yu, Kwisun P.** & Harrell, Laura J. (2005). Chance-Constrained Watershed Management Using Evolutionary Algorithms. Proceedings of the ASCE Watershed Management Conference, July 2005.
15. **Yu, Kwisun P.** and Harrell, Laura J. (2004). Evaluation of Constraint-handling Techniques for Evolutionary Algorithm-based Watershed Management. Proceedings of the ASCE World Water and Environmental Resources Congress, June 2004.

Patents

- US Patent, Inventor (#9704133)
  - Title: System and method for evaluation journal (date of patent: July 11, 2017)
- Korea Patent, Inventor (#1015146500000)
  - Title: **Discipline analysis system, method for analyzing discipline, and medium recorded with program for analyzing discipline** (granted date: April 17, 2015)

Book Chapter

- You could be as comprehensible as the depth of your knowledge about R&D, Chapter 2. **Interdisciplinary research that make world transformative** (2018)

Presentations

1. Australia – Korea Research and Innovation Collaboration Workshop, Seoul, ROK (June 27, 2018)
   Title: Overview of Korean Policy on Research & Innovation
2. 2016 NRF Capacity Building Workshop, Seoul, ROK (Oct. 26, 1, 2016)
   Theme: Industry-university cooperation and technology transfer as a tool for enhancing international development cooperation
   Title: National S&T development program - solving climate change issues via intl. tech. cooperation –
3. National Research Foundation-Kyoto University International Joint-workshop, Daejeon, ROK (Jan. 27, 2014)
   Title: Convergence research promotion strategy and review processes in basic science and engineering of National Research Foundation of Korea
   (The workshop was held by request from Kyoto University research administrator who attended SRAI annual meeting)
4. TEDxSNUSuwon, Suwon, ROK (Nov. 16, 2013)
   Title: **The NRF on Convergence – a peek inside the black box**
   https://www.youtube.com/watch?v=BTWBGOFeo10&t=7s
5. SRA International 2013 Annual Meeting, New Orleans, U.S.A. (Oct. 29, 2013)
   Title: SA(Sponsors & Agencies) T55. Convergence research promotion strategy and review processes in basic science and engineering of National Research Foundation of Korea
6. 2012 NRF Capacity Building Workshop, Seoul, ROK (Nov. 1, 2012)
   Theme: the advancement of research support management system in developing countries
   Title: The NRF's convergence research support for basic research in science & engineering - the beginning of transformation -
7. Yu, Kwisun P. and Jaewan Yoon (2007). "Comparative Feasibility Study of Moderate Resolution Imaging Spectroradiometer (MODIS) Image-based Chlorophyll a Concentration Estimation Model in the James River Estuary, Virginia," 2007 KSEA YGTL Conference
8. Yu, Kwisun P. (2005). "Genetic Algorithm-based Watershed Management Strategy as an Alternative Generator," 2005 SEVA KSEA Conference.