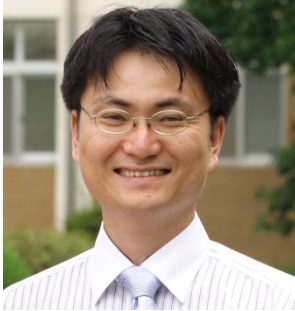


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March 1, 2018

PRESENT POSITION



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PROFESSIONAL EXPERIENCES

- 2018.03 – Current Associate Professor, [Department of Systems Biotechnology](#), Konkuk university
- 2016.03 – 2018.02 Assistant Professor, [Department of Systems Biotechnology](#), Konkuk university
- 2014.03 – 2016.02 Professor, [Biosystems & Bioengineering \(시스템생명공학\)](#), [University of Science and Technology \(UST\)](#), Daejeon, Korea
- 2013.03 – 2016.02 Principal Research Scientist (책임연구원), Synthetic Biology and Bioengineering Research Center KRIBB
- 2009.03 – 2011.12 Postdoctoral Fellow, [Baliga Lab](#), [Institute for Systems Biology](#) (ISB), Seattle, USA
- 2006.09 – 2010.08 Lecturer (강사), Functional Genomics Major, [University of Science and Technology \(UST\)](#), Daejeon, Korea
- 2003.07 – 2013.02 Senior Researcher (선임연구원), Systems Microbiology Research Center / Systems & Synthetic Biology Research Center, KRIBB
- 2002.11 – 2003.06 Post Doc. [Korea Research Institute of Bioscience and Biotechnology \(KRIBB\)](#)
- 1998.03 – 2002.02 Teaching Assistant, [Department of Chemical Engineering](#), [Korea Advanced Institute of Science and Technology \(KAIST\)](#)

EDUCATION

- 1998.03 – 2002.08 Department of Chemical & Biomolecular Engineering, KAIST (Ph.D.)
(Dissertation: Development of *Escherichia coli* DNA microarray and global gene expression profiling in *Escherichia coli*, Supervisor: Sang Yup Lee)
(대장균 DNA microarray 개발 및 이를 이용한 유전체 발현 연구)
- 1996.03 – 1998.02 Department of Chemical Engineering, KAIST (M.S.)
(Dissertation: Development of fermentation strategies for the production of poly(γ -glutamic acid) and insulin-like growth factor I, Supervisor: Sang Yup Lee)
(Poly(γ -glutamic acid) 와 insulin-like growth factor I 생산을 위한 유가식 배양 전

락의 개발)

1992.03 – 1996.02 Department of Chemical Engineering, KAIST (B.S.)

ACTIVITIES IN ACADEMIC SOCIETIES

- 2017-Current [BMC Systems Biology](#), Associate Editor (2017.02.15)
- 2016-2017 한국미생물학회, 학술위 실무위원
- 2013 한국미생물생명공학회, 홍보간사
- 2013.07.03 Session organizer and chair, “Systems Biology: Reshaping Biology into a Predictive Science” 한국미생물생명공학회 국제심포지엄
- 2010.09 – 2011.10 Founding member, Secretary, Korean BioMedical Society (KBMS) at Seattle
- 2008 – 2011 [Recent Patents on Biotechnology](#), Editorial Advisory Board Member
- 2003 – 2006 Korean Society for Bioinformatics (KSBI), Committee Member

RESEARCH INTERESTS

Systems Biology

Systems Biotechnology / Metabolic Engineering / Synthetic Biology

Bioinformatics / Omics Analysis

Pathogenomics / Host-Pathogen Interaction

AWARDS

- 2014.02.01 Award for excellent staff, KRIBB (우수직원상)
- 2007.02.01 Award for excellent staff, KRIBB (우수직원상)
- 2002.04.13 Award for most excellent poster, Korean Society for Biotechnology and Bioengineering (최우수 포스터상, 한국생물공학회)

MEDIA RECOGNITION

- 2017.05.24 '맞춤형 세포공장' 한걸음 더...산업대장균 생체정보 확보 : [매일경제](#)
- 2017.04.18 바이오산업 이끄는 산업 대장균 유전체 정보 해독: [연합뉴스](#), [조선비즈](#), [매일경제](#), [뉴스1](#), [디지털타임스](#), [전자신문](#), [일요신문](#), [금강일보](#), [베리타스알파](#), [미디어펜](#), [대학저널](#), [뉴스천지](#), [메트로](#), [헬로디디](#), [이닥터스](#), [충청의약뉴스](#), [뉴스와이어](#), [브릿지경제](#), [사이언스타임즈](#), [시사뉴스피플](#), [디지털밸리뉴스](#)
- 2014.10.22 병원성·항생제 내성 유전자 DB 개발: [연합뉴스](#), [매일경제](#), [전자신문](#), [디지털타임스](#), [HelloDD](#), [경북도민일보](#)
- 2014.07.15 메탄생성균의 메탄생성과정 비밀 풀다 - 메탄가스 감축에 활용 기대: [전자신문](#)
- 2013.08.29 한번에 미생물 배양·분석 끝내는 기술 개발: [서울경제](#), [매일경제](#), [뉴스1](#), [뉴스스](#), [디지털타임스](#), [아주경제](#), [연합뉴스](#), [HelloDD](#), [중앙일보](#)

- 2012.07.20 대장균 핵심 생체정보 규명; '산업미생물' 대장균, 바이오산업 활용 길 열어: [YTN TV](#), [연합뉴스](#), [아시아뉴스통신](#), [뉴스1](#), [메디컬투데이](#), [헬스코리아뉴스](#), [한겨레](#), [디지털타임스](#), [서울신문](#), [대전일보](#), [매일경제](#), [파이낸셜뉴스](#), [이투데이](#), [뉴시스](#), [아주경제](#), [더사이언스](#), [중앙일보헬스미디어](#), [현대건강신문](#), [디지털보사](#), [금강일보](#), [한국경제](#), [e-메디코파마뉴스](#), [메디칼통신](#), [중부매일](#), [NEWS&](#), [e수원뉴스](#), [메디컬헤럴드](#), [YTN사이언스](#)
- 2009.10.19 유전체 진화경로 규명..생명진화 신기원: [MBC TV](#), [YTN TV](#), [연합뉴스 TV](#), [VJ투데이](#)
- 2007.02.06 21세기를 여는 과학자: [Daejonilbo \(newspaper\)](#), “[Scientist opening 21 century – Dr. Sung Ho Yoon](#)”
- 2006.11.28 병원성 유전자 검색 DB 개발: [YTN TV](#), [MBC TV news today](#), [디지털타임스](#), [파이낸셜뉴스](#), [연합뉴스](#), [동아일보](#), [한국일보](#), [HelloDD](#), [뉴스와이어](#), [약업신문](#), [메티컬업저버](#), [매일신문](#)
- 2003.01.24 대장균 생리시스템 수준서 규명: 한국일보, [디지털타임스](#), [KOSEFnews](#), [대전매일](#), [대전일보](#), [한국경제](#), [한겨레](#), [연합뉴스](#), [중앙일보](#), [HelloDD](#), [아이뉴스24](#), [충청투데이](#), [전자신문](#)

JOURNAL PUBLICATIONS

[Google Scholar Citations to the following publications](#)

- 28) Kim SK, Lee D-H, Kim OC, Kim JF, and **Yoon SH** “[Tunable control of an *Escherichia coli* expression system for the overproduction of membrane proteins by titrated expression of a mutant *lac* repressor](#)” *ACS Synthetic Biology* 6(9):1766-1773 (2017.09) (IF 5.382)
- 27) Jeong H, Lee S-W, Kim SH, Kim E-Y, Kim S, and **Yoon SH** “[Global functional analysis of butanol-sensitive *Escherichia coli* and its evolved butanol-tolerant strain](#)” *Journal of Microbiology and Biotechnology* 27(6):1171–1179 (2017.06) (IF 1.750)
- 26) Kim S, Jeong H, Kim E-Y, Kim JF, Lee SY, and **Yoon SH** “[Genomic and transcriptomic landscape of *Escherichia coli* BL21\(DE3\)](#)” *Nucleic Acids Research* 45(9):5285-5293 (2017.05) (IF 10.162)
- 25) **Yoon SH** (corresponding), Park YK, and Kim JF “[PAIDB v2.0: exploration and analysis of pathogenicity and resistance islands](#)” *Nucleic Acids Research* 43:D624-D630 (2015.01) (IF 10.162)
- 24) **Yoon SH**, Turkarslan S, Reiss DJ, Pan M, Burn JA, Costa KC, Lie TJ, Slagel J, Moritz RL, Hackett M, Leigh JA, and Baliga NS “[A systems level predictive model for global gene regulation of methanogenesis in a hydrogenotrophic methanogen](#)” *Genome Research* 23(11):1839-1851 (2013.11) [Hanbitsa](#) (IF 11.922)
- 23) Dai J, **Yoon SH** (co-first), Sim HY, Yang YS, Oh TK, Kim JF, and Hong JW “[Charting microbial phenotypes in multiplex nanoliter batch bioreactors](#)” *Analytical Chemistry* 85(12):5892-5899 (2013.06) (IF 6.320)
- 22) Costa KC, **Yoon SH**, Pan M, Burn JA, Baliga NS, and Leigh JA “[Effects of H₂ and formate on growth yield and](#)

- [regulation of methanogenesis in *Methanococcus maripaludis*](#)” *Journal of Bacteriology* 195(7):1456-1462 (2013.04) (IF 3.143)
- 21) **Yoon SH**, Han MJ, Jeong H, Lee CH, Xia XX, Lee DH, Shim JH, Lee SY, Oh TK, and Kim JF “[Comparative multi-omics systems analysis of *Escherichia coli* strains B and K-12](#)” *Genome Biology* 13(5):R37 (2012.05) [Hanbitsa](#) (IF 11.908)
- 20) **Yoon SH**, Reiss DJ, Bare JC, Tenenbaum D, Pan M, Slagel J, Moritz RL, Lim S, Hackett M, Menon AL, Adams MW, Barnebey A, Yannone SM, Leigh JA, and Baliga NS “[Parallel evolution of transcriptome architecture during genome reorganization](#)” *Genome Research* 21(11):1892-1904 (2011.11) [Hanbitsa](#) (IF 11.922)
- 19) **Yoon SH**, Kim SK, and Kim JF “[Secretory production of recombinant proteins in *Escherichia coli*](#)” *Recent Patents on Biotechnology* 4(1):23-29 (2010.01)
- 18) Jeong H, Barbe V, Lee CH, Vallenet D, Yu D-S, Choi S-H, Couloux A, Lee S-W, **Yoon SH**, Cattolico L, Hur C-G, Park H-S, Ségurens B, Kim SC, Oh TK, Lenski RE, Studier FW, Daegelen P, and Kim JF “[Genome sequences of *Escherichia coli* B strains REL606 and BL21\(DE3\)](#)” *Journal of Molecular Biology* 394(4):644-652 (2009.12) (Featured as a Cover) (IF 4.632)
- [News Releases in AlphaGalileo \(Nov. 26,2009\)](#)
- 17) Barrick JE, Yu D-S, **Yoon SH**, Jeong H, Oh TK, Schneider D, Lenski RE, and Kim JF “[Genome evolution and adaptation in a long-term experiment with *Escherichia coli*](#)” *Nature* 461(7268):1243-1247 (2009.10) [Hanbitsa](#) (IF 40.137)
- Article paper. [Evaluated Exceptional with F1000 Article Factor 19 by Faculty of 1000](#); [News and Views in Nature \(Oct. 29, 2009\)](#); [Research Highlights in Nat. Rev. Genet. \(Dec. 2009\)](#); [Dispatch in Curr. Biol. \(Jan. 12, 2010\)](#); [News and Analysis in Nat. Rev. Microbiol. \(Feb. 2010\)](#); [News Releases in AlphaGalileo \(Nov. 26, 2009\)](#); [Highlights in A-IMBN Research \(Jan. 13, 2010\)](#); [Highly cited paper in Hanbitsa](#)
- 16) Kim JF, Jeong H, Yu DS, Choi S-H, Hur C-G, Park M-S, **Yoon SH**, Kim D-W, Ji GE, Park H-S, and Oh TK “[Genome sequence of the probiotic bacterium *Bifidobacterium animalis* subsp. lactis AD011](#)” *Journal of Bacteriology* 191(2):678-679 (2009.01) (IF 3.143)
- 15) Jeong H, **Yoon SH**, Yu D-S, Oh TK, and Kim JF “[Recent progress of microbial genome projects in Korea](#)” *Biotechnology Journal* 3(5):601-611 (2008.05) (IF 3.649)
- 14) Nam D, **Yoon SH**, and Kim JF “[Ensemble learning of genetic networks from time-series expression data](#)” *Bioinformatics* 23(23):3225-3231 (2007.12) (IF 7.307)
- 13) **Yoon SH**, Park YK, Lee S, Choi D, Oh TK, Hur C-G, and Kim JF “[Towards pathogenomics: a web-based resource for pathogenicity islands](#)” *Nucleic Acids Research* 35:D395-D400 (2007.01) (IF 10.162)
- 12) Jiang H, Shang L, **Yoon SH**, Lee SY, and Yu Z “[Optimal production of poly-γ-glutamic acid by metabolically engineered *Escherichia coli*](#)” *Biotechnology Letters* 28(16):1241-1246 (2006.08) (IF 1.730)

- 11) Hur C-G, Kim S, Kim CH, **Yoon SH**, In YH, Kim C, and Cho HG "[FASIM: Fragments assembly simulation using biased-sampling model and assembly simulation for microbial genome shotgun sequencing](#)" *Journal of Microbiology and Biotechnology* 16(5):683-688 (2006.05) (IF 1.750)
- 10) Jeong H, **Yoon SH**, Lee HK, Oh TK, and Kim JF "[Lessons from the sea: genome sequence of an algicidal marine bacterium *Hahella chejuensis* \(적조 살상 해양 미생물 *Hahella chejuensis* 의 유전체 구조\)](#)" *Korean Journal of Microbiology and Biotechnology* 34(1):1-6 (2006.03)
- 9) Jeong H, Yim JH, Lee C, Choi SH, Park YK, **Yoon SH**, Hur CG, Kang HY, Kim D, Lee HH, Park KH, Park SH, Park HS, Lee HK, Oh TK, and Kim JF "[Genomic blueprint of *Hahella chejuensis*, a marine microbe producing an algicidal agent](#)" *Nucleic Acids Research* 33(22):7066-7073 (2005.12) (IF 10.162)
- 8) **Yoon SH**, Hur C-G, Kang HY, Kim YH, Oh TK, and Kim JF "[A computational approach for identifying pathogenicity islands in prokaryotic genomes](#)" *BMC Bioinformatics* 6:184 (2005.07) (IF 2.448)
- 7) **Yoon SH**, Han MJ, Lee SY, Jeong KJ, and Yoo JS "[Combined transcriptome and proteome analysis of *Escherichia coli* during the high cell density culture](#)" *Biotechnology and Bioengineering* 81(7):753-767 (2003.03) (IF 4.481)
- 6) **Yoon SH** and Lee SY "[Comparison of transcript levels by DNA microarray and metabolic flux based on flux analysis for the production of poly- \$\gamma\$ -glutamic acid in recombinant *Escherichia coli*](#)" *Genome Informatics* 13:587-588 (2002.12)
- 5) Kim JS, **Yoon SH**, and Lee SY "[Development of database systems by integrating heterogeneous metabolic databases](#)" *Genome Informatics* 13:486-487 (2002.12)
- 4) Heo WJ, **Yoon SH**, and Lee SY "[Global gene expression profiling of *E. coli* and its mutant unable to produce acetate](#)" *Genome Informatics* 13:270-271 (2002.12)
- 3) **Yoon SH**, Do JH, Lee SY, and Chang HN "[Production of poly- \$\gamma\$ -glutamic acid by fed-batch culture of *Bacillus licheniformis*](#)" *Biotechnology Letters* 22(7):585-588 (2000.04) (IF 1.730)
- 2) Chung BH, Choi YJ, **Yoon SH**, Lee SY, and Lee YI "[Process development for production of recombinant human insulin-like growth factor-I in *Escherichia coli*](#)" *Journal of Industrial Microbiology and Biotechnology* 24(2):94-99 (2000.02) (IF 2.810)
- 1) **Yoon SH**, Choi J, and Lee SY "[Development of DNA chip microarrayer](#)" *Journal of Microbiology and Biotechnology* 10(1):21-26 (2000.02) (IF 1.750)

BOOK CHAPTERS

- 1) **Yoon SH**, Jeong H, Kwon S-K, and Kim JF "[Genomics, biological features, and biotechnological applications of *Escherichia coli* B: "Is B for better?!"](#)", pp. 1-17, *In: Systems Biology and Biotechnology of E. coli*, Lee SY (ed.) Springer, Berlin, Germany, ISBN 978-1-4020-9394-4 (2009.04)

PATENTS

8) **Yoon SH** and Kim S “High-temperature resistant microorganism overexpressing YbeD protein and method for culturing of high-temperature resistant microorganism using the same” Korean Patent: appl. 10-2018-0009345 (2018.01.25)

윤성호, 김신연 “YbeD 단백질을 과발현하는 고온 내성 미생물 및 이를 이용한 고온 내성 미생물의 배양 방법” 특허출원번호: 10-2018-0009345 (2018.01.25)

7) **Yoon SH**, Lee DH, Kim SK, and Kim OC “Method for producing toxic protein using the LacI protein mutant” Korean Patent: appl. 10-2013-0002227 (2013.01.08), Korean Patent number 10-1419214-00-00 (2014.07.08)

윤성호, 이대희, 김성근, 김오철 “LacI 단백질 변이체를 이용한 독성 단백질의 생산방법” 특허출원번호 10-2013-0002227 (2013.01.08), 특허등록번호 10-1419214-00-00 (2014.07.08)

6) 김지현, **윤성호**, 김성근, 이대희, 권순경, 오태광, 김오철, 정해영 “LacI 단백질 변이체를 이용한 독성 단백질의 생산 방법” (우선권내역: 10-2012-0038237 / 10-2013-0002227) PCT/KR2013/002919 (2013.04.08)

5) Kim JF, Kim SK, Kwon S-K, Oh TK, **Yoon SH**, Lee DH, and Jeong H “LacI protein mutant and uses thereof” Korean Patent: appl. 10-2012-0038237 (2012.04.13)

김지현, 김성근, 권순경, 오태광, **윤성호**, 이대희, 정해영 “LacI 단백질 변이체 및 이의 용도” 특허출원번호 10-2012-0038237 (2012.04.13)

4) Hong JW, Kim JF, Oh TK, and **Yoon SH** “Microfluidic array system for biological, chemical, and biochemical assessments” US7906074B2 (Date of Patent: March 15, 2011)

3) Jeong H, Han JH, **Yoon SH**, Ryu C-M, Kim JF, Oh TK, Jung MH, and Yoon SP “Method for Selecting Alcohol Resistant Variants of Microorganism Using Mutagenesis by Proton Beam Irradiation” Korean Patent: appl. 10-2009-0080393 (2009.08.28)

정해영, 한지희, **윤성호**, 류충민, 김지현, 오태광, 정명환, 윤상필 “양성자 빔 조사에 의한 돌연변이 유도방법을 이용한 알코올 내성 미생물 변이체의 선별 방법” 특허출원번호 10-2009-0080393 (2009.08.28)

2) Hong JW, Kim JF, Oh TK, and **Yoon SH** “A fluidic array system for biological, chemical, and biochemical assessments” WO2008124781A1 / US20080248960A1 (PCT/US08/59777) (filed on April 9, 2008)

1) Lee SY and **Yoon SH** “Methods for producing high concentration of poly (gamma-glutamic acid) by fed-batch culture of *Bacillus licheniformis*” Korean Patent: appl. 97-67605 (1997.12.10), registered 250627 (2000.01.05)

이상엽, **윤성호** “바실러스 리케니포니스에 의한 폴리글루탐산(γ -PGA)의 고효율 생산방법” 특허출원번호 10-1997-0067605 (1997. 12. 10), 등록번호 1002506270000 (2000.01.05)

PROGRAM REGISTRATIONS

- 2) 김지현, 윤성호, 허철구, 오태광 “미생물 유전체 내에서 외래에서 유입된 병원성 유전자군인 pathogenicity island를 예측하는 방법” 한국저작권위원회 (등록일자: 2007.07.30; 등록번호: S-2007-003964)
- 1) 김지현, 윤성호, 허철구, 박영규, 오태광 “미생물 유전체 내에서 외래에서 유입된 병원성 유전자군인 pathogenicity island를 분석, 예측하는 시스템” 한국저작권위원회 (등록일자: 2007.07.30; 등록번호: S-2007-003962)

ESSAYS

- 12) 윤성호 “[미생물의 대사 네트워크 및 유전자조절 네트워크 모델링 기법 개발](#)” BT News, 한국 생물공학회, 24(2) (2017.10.09)
- 11) 윤성호 “[대사경로 재설계를 통한 유용 화학물질 생산 전략](#)” 지능형 바이오시스템 설계 및 합성 연구단 뉴스레터 2(3) (2014.10.23)
- 10) 윤성호 “[Bio-CAD를 이용한 지능형 바이오시스템 설계](#)” 지능형 바이오시스템 설계 및 합성 연구단 뉴스레터 1(1) (2013.01.18)
- 9) 윤성호, 이정민 “합성생물학 윤리 및 기술에 관한 미대통령 정책자문 보고서” (NEW DIRECTIONS: The Ethics of Synthetic Biology and Emerging Technologies 번역요약본) KOSEN21 (한민족 과학기술자 네트워크, <http://www.kosen21.org>) (2011.10.17)
- 8) 윤성호 “[합성생물학에서의 미생물 유전자회로 및 대사회로개발](#)” 생명공학정책연구센터 바이오인(BioIn), 16 (2010.05.28)
- 7) 윤성호 “[Institute for Systems Biology](#)” e-Bioindustry News (e-생물산업, 한국미생물/생명공학회 소식지), 22(4) (2009.12)
- 6) 윤성호 “[Systems and Synthetic Biology](#)” In State of the Art Report on Microbial Genomics (미생물유전체 연구동향 분석연구), Ministry of Science and Technology (과학기술부) Korea (2007)
- 5) 윤성호 “[Biolog사의 Phenotype Microarray \(PM\) Technology](#)” 미생물과 산업, 32(2): 28-29, 한국미생물학회 (2006)
- 4) 이승구, 김지현, 정흥채, 송재준, 류충민, 윤성호 “바이오기반 경제구축을 위한 합성생물학 핵심기술 개발” (Development of Platform Technologies for Synthetic Biology), KRIBB, Korea (2006)
- 3) 김지현, 정해영, 윤성호, 박승환 “[시스템 미생물학 : 유전체 해독에서 네트워크 재설계까지](#)” (Systems Microbiology : From Genome Sequencing to Network Engineering), e-Bioindustry News (e-생물산업, 한국미생물/생명공학회 소식지), 16(3) (2003.06)
- 2) 김진식, 윤성호, 이상엽 “[미생물 게놈 연구](#)”, 생명공학정책연구센터 바이오인(BioIn) (2001.06.01)

- 1) 이상엽, 윤성호, 임근배, 조윤경 “[Genomics와 DNA chip](#)” News & Information for Chemical Engineers (NICE), 한국화학공학회, 18(3): 307-311 (2000)