

CURRICULUM VITAE

2024

Personnel Data

Prof. Spencer A. Benson, Ph.D.
Founder and Director Education Innovations International Consulting, LLC
Consultant Graduate School, University of Maryland College Park
Address: 4215 Van Buren St. University Park MD, USA, 20782-1188
Phone: US +1 240 676 8808
Email: sbenson51@gmail.com, sbenson@eii-consulting.com, sab51@umd.edu
Website: <http://eii-consulting.com/>



Education

University of Chicago, Chicago, IL	Ph.D.	1978	Genetics
University of Vermont, Burlington, VT	B.A.	1973	Zoology

Professional Work and Experiences

2021-2025 External Evaluator for G-RISE, (an NSF funded program for STEM minority graduate PhD students) at Old Dominion University. Norfolk VA, USA

2021-Present Review Editor, *Frontiers in Education*

2020-Present Consulting Editor, *College Teaching*

2019-Present Board of Directors, Women's Empowerment and Voice

2019-Present Editorial Consultant, *Taiwan Journal of General Education*

2018-Present Consultant Graduate School, University of Maryland College Park,

2017-Present Founder and Director Education Innovations International Consulting (Eii-Consulting)

2020-2022 Organizing Committees for 2020, 2021 and 2022 SoTL-China International Conference, organized by Beijing Institute of Technology

2018-2022 Editorial Board Member, *Journal of Excellence in College Teaching (JECT)* and *Learning Communities Journal (LCJ)*, USA

2017-2019 Advisor, Center for Teaching and Learning, Nanjing University, Nanjing, PRC

2017-2020 Hong Kong Council for Accreditation of Academic and Vocational Qualifications (HKCAAVQ) Specialist

2017-2017 External Reviewer for Hong Kong Baptist University GE program LLC), Maryland, USA

2013-2017 Director Centre for Teaching and Learning Enhancement (CTLE) University of Macau, Macau, SAR, China (retired Aug. 2017)

2013-2016 Head of General Education University of Macau

2013-2017 Professor Faculty of Health Sciences, University of Macau, Macau, SAR, China (retired 2017)

2008-2009 US Fulbright Visiting Scholar, University of Hong Kong & Hong Kong American Center, Hong Kong, SAR

2003-2013 Director, Center for Teaching Excellence, University of Maryland, College Park, MD (retired 2014)

2005-2014 Affiliate Associate Professor, Dept. Curriculum and Instruction, College of Education, University of Maryland, College Park, MD (retired 2014)

2003-2004 SENCER Visiting Fellow, American Association of College and Universities

2000-2001 Visiting Professor, Institute of Bio-Molecular Science, Academia Sinica, Taipei, Taiwan (sabbatical)

1993-2014 Associate Professor, Department of Microbiology, University of Maryland, College Park, MD, (retired 2014)

1988-1993 Assistant Professor, Department of Microbiology, University of Maryland, College Park, MD

1984-1988 Research Molecular Biologist, Department of Molecular Biology, Princeton University, Princeton, NJ

1983-1984 Scientist, Laboratory of Genetics and Recombinant DNA, NCI-Frederick Cancer

	Research Facility, Frederick, MD
1980-1983	NCI Postdoctoral Fellow, Laboratory of Genetics and Recombinant DNA, NCI-Frederick Cancer Research Facility, Frederick, MD
1980-1982	Assistant Professor, Cold Spring Harbor Advanced Bacterial Genetics Course Cold Spring Harbor, NY
1978-1979	Postdoctoral Fellow, Petroleum Research Fund, American Chemical Society, University of Chicago, IL

Peer Reviewed Education Publications (Last Ten Years)

- Benson, S.A. 2024, Embracing Technologies to Facilitate Student Learning and Future Readiness. Proceedings 2024 ISET Conference Macau, SAR, China in Press
- Huang, F., Oon, E.P, Benson, S. The Use of Learner-Centered Pedagogies and E-Portfolios to Facilitate Pre-Service and In-Service Teachers' Development in an Asian System, in Online Teaching and Learning in Asian Higher Education, 2023, p 49-72, Palgrave Macmillan Cham, Switzerland, <https://doi.org/10.1007/978-3-031-38129-4>
- Oon, P.T, Pegrum, M. Stevenson, M., Benson, S., 2023 Exploring science pedagogy on the web 2.0/mobile border: Teachers' _views of a mobile wiki-based inquiry approach. EURASIA Journal of Mathematics, Science and Technology Education, 19(1), (online) <https://doi.org/10.29333/ejmste/12820>
- McLeod, M., & Benson, S. (2022). Mentoring for success: Best practices to support our students and colleagues—A message from the guest editors. Journal on Excellence in College Teaching, 33(4), 1-7.
- Benson, S.A. 2022, Educating for Peace in the 21st Century, Proceedings First Annual International Conference on Religion, Culture, Peace and Education, Payap University, Thailand
- Fisher W.P, Pey-Tee Oon E. Benson S. 2021, Rethinking the role of educational assessment in classroom communities: How can design thinking address the problems of coherence and complexity? Educational Design Research, 5(1), 1-33. dx.doi.org/10.15460/eder.5.1.1537
- Benson, S. A., 2021, Inclusivity Begins with Overcoming Bias, The Scholarly Teacher Blog, <https://www.scholarlyteacher.com/post/inclusivity-begins-with-overcoming-bias>
- Benson, S. A., 2021, Making Connections in Education to Improve Your Teaching, ASM Teaching Microbiology Blog Jan. 2021, <https://asm.org/Articles/2021/January/The-Role-of-Connections-in-Education>
- Benson, S.A. 2020, Making Mentoring Meaningful and Effective, The Scholarly Teacher Blog <https://www.scholarlyteacher.com/post/making-mentoring-meaningful-and-effective>
- Benson, S. A., 2019 First Generation College Students: A Journey Without Maps, The Scholarly Teacher Blog <https://www.scholarlyteacher.com/post/guiding-first-generation-students>
- Benson, S. A. 2019, Can We Motivate Students to Learn?, The Scholarly Teacher Blog <https://www.scholarlyteacher.com/post/can-we-motivate-students-to-learn>
- Benson, S. A. 2018, Connecting Assessment and Learning, The Scholarly Teacher Blog, <https://www.scholarlyteacher.com/blog/connecting-assessment-and-learning>
- Benson, S. A. 2018, How to Use Questions to Promote Student Learning, The Scholarly Teacher Blog <https://www.scholarlyteacher.com/blog/using-questions-for-student-learning>
- Fisher W.P, Pey-Tee Oon E. Benson S.A. 2017, Applying Design Thinking to systemic problems in educational assessment information management. Journal of Physics Conference Series Rio Brazil
- Wu, H, Benson, S.A. 2017, Made in China 2025 New Trends of Entrepreneurship Education of China: A Socio-Economic-Educational Perspective. Asian Education Studies Vol 2(1)
- Pey-Tee Oon E, Benson S.A, Kam C.S (Chester). 2016 Psychometric Quality of a Student Rating Survey on Teaching and Learning Quality in Higher Education, Assessment and Evaluation in Higher Education 41:1-3
- A. A. Badawy, M. Ibrahim and S. Benson, 2016 "Let There Be Hope: Assessing the Implications of Exam Re-Taking on Student Learning Outcomes and Grades of Engineering Students Grounded on Metacognition Awareness Framework," 2016 International Conference on Computational Science and Computational Intelligence (CSCI), Las Vegas, NV, 2016, pp. 270-275.

- Benson, S. A. 2015, Meeting the Standards for STEM Educations: Individual and National Needs, Book Chapter Proc. Waterbury Educational Summit, 2013, Penn. State University, R. Duschel and A. Bismart Eds.
- Schmitt, KR.B., Larsen E.A., Miller M, Badawy A.H.A., Dougherty M., Taylor-Sharma A., Hrapczynski A., Andrew A, Robertson B., Williams A., Kramer S., Benson S.A. 2013 A Survey Tool for Assessing Student Expectations Early in a Semester, JMBE, 14: 255-257
- Schmitt, KR.B., Larsen E.A., Miller M, Badawy A.H.A., Dougherty M., Taylor-Sharma A., Hrapczynski A., Andrew A, Robertson B., Williams A., Kramer S., Benson S.A 2014, A Failing Grade for CS Faculty: Comparing Faculty Perception of Student Expectations and Reality, Consortium of Computing Sciences in Colleges (CCSC-Region Meeting) PA

Non Peer Reviewer Educational Publications

- Benson, S. A. Centre for Teaching and Learning Enhancement University of Macau 2016 Teaching Tips of the Week <https://ctle.umac.mo/2016/12/06/ctle-teaching-tips-of-the-week-directory/>
- Benson, S. A. Center for Teaching Excellence Newsletter on Teaching and Learning 2003-2013, >30 articles on teaching and learning <http://www.cte.umd.edu/staff/spencer/spencer-publications.html>
- Benson, S.A., Zedalis J. (co-chairs) AP-Biology Curriculum Framework 2012-2013, the new AP Biology Course [2012-13 AP-Biology Curriculum Framework](#)
- Benson, S. A. 2009. General Education in Hong Kong for the 21st Century: A Case Study of the University of Hong Kong, submitted book chapter for the Hong Kong American Center, Hong Kong General Education Initiative, S. Benson and E. Eoyang eds.
- Benson, S. A., A. Bedford, et al. 2008. The Next Challenge and Frontier: Digital Learners and Digital Teachers. Asia-Pacific Sub-regional Preparatory, Conference for the 2009 World Conference on Higher Education, "Facing Global and Local Challenges: the New Dynamics for Higher Education". Macao, SAR, China.
- Shapiro, N., Benson, S.A., Maloney, P.A., Frank, J., Abdi Dezfooli, N., Susskind, D., Munoz, M., 2006, Report on Course and Curriculum Changes in Math and Science Partnership (MSP) Programs Change and Sustainability in Higher Education (CASHE), 2006, <http://hub.mspnet.org/index.cfm/13463>
- Benson S. A. 2004. Using Assessment to Foster Student Learning Focus on Microbiology Education. 10: <http://www.microbelibrary.org/>
- Benson S. A. 2003. The Role of Connections in Teaching and Learning Focus on Microbiology Education. 10: <http://www.microbelibrary.org/>
- Benson, S. A. Coleman W. H., Fisher, L. E., Kullman, D., Nakaoka K., 2002 Unseen Life on Earth" Using the Video Series to Enhance Student Learning, ASM-News, 68:182-184
- Benson S. A. 2000. Looking Forward-Reflecting Back in Microbiology Education, Focus on Microbiology Education. 7: 12-13
- Yuan, R. T. and S. A. Benson. 2000, The Endless Frontier. AAHE Web Center Resource, <http://aahe.ital.utexas.edu/rsrc>
- Benson, S. A. and A. C. Chang, 2000. Microbiology Education: A New Venue for Scholarship in Microbiology Education, Focus on Microbiology Education 6: 13-14

Conference and Invited Presentations (Education) (Last Five Years)

- ISET 2024, Macau, SAC, China, Embracing Technologies to Facilitate Student Learning and Future Readiness, (July 28-Aug 01, 2024)
- AIACHE India College Workshops, Faculty Excellence in Teaching and Scholarship, Southern India, (Hyderabad, Chennai, Bangalore, Cochi, Goa), "Challenges for 21st Century Teaching and Learning (OBE, AI, Assessment)", Motivating Student in a World Filled with Distractions and Disruptors. Oct 18-31, 2023

- Keynote 2023 Sprint-ECP Conference, Trinity University Philippines “21st Century Teaching and Learning: Maximizing Student Learning in a Changing World” May 2023
- Invited Talk CTLE, University Macau “Assessments and Grades in a Disruptive World: New Ideas – New Approaches” Mar. 2023
- GIST Plenary Talk “Re-imagining STEAM Education in a Changing World” Phenikaa Univeristy Vietnam, July 2023
- Mentorship Training for United Board Fellow, a six-session workshop the effective mentoring, June-July 2023
- Philippines Society Microbiology, Ateneo De Manila Dec. 2022, Plenary Fostering Student Learning Through Engagement: Making Lectures Effective
- United Board Scholars Symposium, Sept. 2022, Plenary, “Integrating Research-Teaching-Service: Finding Balance” (virtual)
- Pacific-Links NGO, 2022 Connect Summer Camp, July. 2022 Being a, Effective Learner, Vietnam, (Virtual)
- First Annual International Conference on Religion, Culture, Peace and Education, Apr. 2022 “Educating for Peace” Payap University, Chiang Mai, Thailand
- Latin American Congress of Microbiology, ALAM Conference, Aug. 2021, “Re-thinking, Re-evaluating STEM Teaching in a Covid World ” Paraguay (Virtual)
- ICS-STEAM Conference, July 2021 “Re-thinking, Re-evaluating STEM Teaching in a Covid World” Vietnam, (Virtual)
- Pacific-Links NGO, 2021 Connect Summer Camp, July. 2021 Being a Super Learner, Vietnam, (Virtual)
- ASMCUE Conference June 2021, Inclusive Teaching Begins with Understanding Bias, (Virtual)
- Soegijapranata Catholic University, Papua Christian University International Conference, Indonesia Oct. 2020, Fostering Student Engagement: In Today’s Learning Environments, (Virtual)
- Office of China Affairs, University of Maryland, Oct. 2020, workshop for Beijing University of Technology, “Engaged Teaching and Student Motivation at Research Intensive Institutions” (Virtual)
- Pacific-Links NGO, Sept. 2020 Two-linked workshop for Vietnamese students on Effective Study Strategies (Virtual)
- China-SoTL Conference, Beijing Institute Technology, Panel Aug. 2020, SoTL in a Reconfigured World: An International & Multidisciplinary Perspective (Virtual)
- China-SoTL Conference, Beijing Institute Technology, Aug. 2020, Integrating SoTL into Your Teaching: How Teaching is Research (Virtual)
- CCE - Inter-disciplinary Programme for Nanchang University, Aug, 2020, “Being an Effective 21st Century Leader, Teacher and Learner” (Virtual)
- Pacific-Links NGO, 2020 Connect Summer Camp Aug. 2020 Becoming a Super Student (Virtual)
- UMD Office of China Affairs, Southwest University Group Apr. 2020, Teaching as Research: Integrating SoTL into Your Teaching (Virtual)
- UMD Office of China Affairs, Southwest University Group Mar. 2020, Assessment of/for/as Learning: Strategies for Students and Courses (Virtual)
- UMD Office of China Affairs, Southwest University Group Mar. 2020 “Course Redesign & Project-Based Learning: Integrating 21st Century Learning Skills Into: Your Courses (Virtual)
- UMD Office of China Affairs, Southwest University Group Feb. 2020, Fostering Student Motivation for Learning?
- 16th Promise AGEP Symposium, University of Maryland System, Feb. 2020, Strengthening Mentor-Mentee Relationships Inclusive Mentorship.
- Beijing Jiaotong University, China, Dec. 2019, Fostering Student Motivation for Learning
- Chinese University of Petroleum, Beijing, China, Dec. 2019, Assessment of/for/as Learning: Strategies for Students and Courses
- Beijing Institute of Technology, China, Dec. 2019, Agents for Change: Centers For Faculty Development [CFD]

- Beijing Institute of Technology, China, Dec. 2019, Can We Foster Student Motivation for Learning?
- Beijing Institute of Technology, China, Dec. 2019, Assessment of/for/as Learning: Strategies for Students and Courses
- Beijing Institute of Technology, China, Dec. 2019, Teaching as Research: Integrating SoTL into Your Teaching
- Nanjing University, China, Nov. 2019, Discovering What Works: Case Studies on Enhancing University Teaching at Research Universities
- Lilly Conference Miami University, OH Nov. 2019, Less Teaching – More Learning: Things That Work
- University of Maryland, DIT, Nov. 2017, Educating Students for 2030: the Importance of Digital Fluency
- Nanjing University, China, Nov. 2019, Beyond Discipline Knowledge: Equipping Students to Succeed Today and Tomorrow
- Vietnam National University, Ho Chi Min, Oct. 2019, Faculty of Education Design Thinking Approaches for Higher Education
- Vietnam National University, Ho Chi Min, Oct. 2019, Education 4.0: Preparing Today’s Students for 21st Century Success: Motivation, e-Learning Technologies and Outcomes
- Vietnam National University, Ho Chi Min, Oct. 2019, Engaging Faculty in Transition to Whole Person Education: Faculty Learning Communities
- Vietnam National University, Ho Chi Min, Oct. 2019, Assessment of/for/as Learning: Academic and Co-Curricular Education
- Vietnam National University, Ho Chi Min, Oct. 2019, Use of ICT for Teaching and Learning in Whole Person Education
- Vietnam National University, Ho Chi Min, Oct. 2019, Teaching and Learning for the 21st Century Success: Today, Tomorrow and Beyond
- United Board, Harvest Seminar, Sept. 2019, Yogyakarta Indonesia, “Teaching and Learning in the 21st Century: Whole Person Education for Today, Tomorrow and Beyond”
- United Board, Harvest Seminar, Sept. 2019, Yogyakarta Indonesia, “Assessment of/for/as Learning: Using Assessment to Motivate and Facilitate Learning”
- United Board, Harvest Seminar, Sept. 2019, Yogyakarta Indonesia, “Centers for Teaching and Learning and Learning Communities as Agents for Change”
- WEAV [Women’s Empowerment and Voice] Hanoi, Sept. 2019, “Career and College Readiness for 21st Century Learning”
- FORTE [Faculty Orientation in Research and Teaching Excellence], Sept. 2019, Salesian College, Sonada, Darjeeling India, “Fostering Student Motivation for Learning”.
- FORTE [Faculty Orientation in Research and Teaching Excellence], Sept. 2019, Salesian College, Sonada, Darjeeling India, “Teaching and Learning for the 21st Century Success: Today, Tomorrow and Beyond”
- Lilly Conference in Effective Teaching, Bethesda MD, June 2019 Plenary 1st Lilly Asia Conference on Effective Teaching, HKBU, Hong Kong, May 2019, “Can We Fostering Student Motivation for Learning?”
- Plenary 1st Lilly Asia Conference on Effective Teaching, HKBU, Hong Kong, May 2019, “Fostering Student Motivation for Learning”
- National Taiwan Normal University, Taipei, Taiwan, Mar. 2019, “Equipping Today’s Student for Tomorrow’s’ World.”
- University of Maryland, College Park MD, Mar. 2019, TLTC workshop, [Can We Foster Student Motivation for Learning?](#)
- University of Maryland, College Park MD, Feb. 2019, Promise Conference, Learning Through Diversity: Being Inclusive, Being Human.
- Workshop, Teaching and Learning Transformation Center, University of Maryland, College Park, Feb. 2019 [“Neurodiversity: From Accommodations to Inclusion”](#)

- John Hopkins University Teaching Academy, JHU-CIRTL Pizza & Pedagogy presentation, Feb. 2019, Neuro “PS: It Matters (Pedagogy Space).
- Co-Constructing Excellence: Recognizing, Scaffolding, and Building Excellence in University Learning and Teaching Conference, Dec 2018 CETL-HKU, Two presentations, “Strengthening the pipeline: The Use of E-Portfolios to Develop Teaching Excellence in Future teachers” with Prof. Emily Oon and “Building Future Excellence: Inspiring, Training and Developing the Next Generation of STEM Faculty:
- Lilly Conference on Teaching and Learning, Miami OH, Nov. 2018, “[Fostering Student Development for Success in a Changing World](#)” with Prof. Emily Oon
- Nanjing University, Center for Teaching and Learning, Nanjing China, Oct. 2018, Three workshops; “Preparing Students for Tomorrow’s Complex Changing World”, “Assessment of/for/as Learning: Strategies for Students and Courses”, “Teaching as Research: Integrating SoTL into Your Teaching” and consulting and course observations”.
- Da-Yeh University, Oct. 2018, Taiwan “Title Fostering Effective 21st University Education: Characteristics and Challenges”
- Tatung University, Oct. 2018, Taiwan, “Assessments of/for/as Learning; Strategies for Students and Courses”
- National Taichung University for Education, Oct. 2018, Taiwan, “Assessments of/for/as Learning; Strategies for Students and Courses”
- International Conference Chinses Association for General Education, Taiwan Oct. 2018, Invited Key Note “Preparing Students for Tomorrow’s Complex Changing World”
- Taiwan Association for General Education, Taipei National Taiwan University, Round Table Forum Panelist, International Perspective on General Education
- ASMCUE 25th Conference Plenary “30 years of ASMCUE and STEM Education: Past, Present and Future” July 2018, Austin TX
- Fifth Higher Education Leadership Program (HELP-V) Conference, June 2018, Yangon, Myanmar, Keynote, “Moving from teacher Centered to Learner Centered Education: First Steps”
- Chinese Association for Suzhi Education (CASE), Mar. 2018, Conference, Chengdu PRC, Workshop Assessments for Learning in GE Courses and keynote on 21st Century Higher Education
- Workshop of Echoing Whole Person Education Academy, Sam Ratulangi University, Mar. 2018, Manado, Indonesia, “21st Century Teaching and Learning,”
- University of Maryland College Park, Teaching and Learning Transformation Center, Dec. 2017
- National University of Singapore, Singapore, Nov. 2017, Two Workshops, “21st Century Education” and “Assessment: Theory-Practice-Reality”
- Jiangsu Assoc. for Teaching and Learning in Higher Education, Zhangzhou, PRC, Oct. 2017, “Developing 21st Century Education; The Role of Teaching and Learning Centers”
- Nanjing University, Center for Teaching and Learning, Nanjing China, Oct. 2017, Three Workshops/Talks “Outcome Based Teaching and Learning (OBTL)”, “Centers for Teaching and Learning”, ‘Effective Teaching; Thoughts and Strategies”
- Ocean University of China, Qingdao, PRC, July 2017, “Assessment: Theory-Practice-Reality”
- General Education Institute Chinese University of Hong Kong, June 2017, Two Interactive Workshops, “Designing and Implementing 21st Century General Education”, “GE 2.9 General Education in 2020”.
- E-learning Forum Asia, Conference Poly, Hong Kong June 2017, “Getting Faculty to Embrace e-Learning”
- Lilly International Teaching Conference, June 2017 Bethesda MD, “Design Thinking in Education: New Paradigm or New Fad”
- International Mobile Learning Festival, University of Hong Kong June 2017, workshop plus presentation “Design Thinking” workshop, “Moving Beyond LMS; Getting Recalcitrant Faculty to Engage M-Learning”
- Central Philippines University, Mar. 2017 Two Workshops i.) “Why OBE Makes Sense: Meeting the Needs of Today and Tomorrow’s Students”, ii.) “Teach Less –Learn More”

- Chinese Association for Suzhi Education, Mar. 2017 “Making GE-Suzhi Courses Relevant for Students - for Life”, Nanjing PRC
- Hong Kong International School, Hong Kong American Center mini-symposium Feb. 2017 “Design Thinking Context and Thoughts”

Peer Reviewed Science Discipline Research Articles (Since 1990)

- Klebba, P. E., S. A. Benson, S. Bala, T. Abdullah, J. Reid, S. P. Singh and H. Nikaido. 1990. Determinants of OmpF porin antigenicity and structure. *J. Biol. Chem.* 265:6800-6810.
- Benson, S. A., A. M. DeCloux and J. Munro. 1991. Mutant Bias in non-lethal selections results from selective recovery of mutants. *Genetics.* 129: 647-658.
- Li, Tsai-Hsia, S. A. Benson and S. W. Hutcheson. 1992. Phenotypic expression of the *Pseudomonas syringae* pv. *syringae* 61 hrp/hrm gene cluster in *Escherichia coli* requires a functional porin. *J. Bacteriol.* 174:1742-1749
- Gauthier, M. J., S. A. Benson, G. N. Flatau, R. L. Clement, V. A. Breittmayer, and P. M. Munro. OmpC and OmpF porins influence viability and culturability of *Escherichia coli* cells incubated in seawater. 1992. *Microb. Releases.* 1:47-50
- Swidersky, U. E., A. Reinhofer-Schweer, P. K. Werner, F. Ernst, S. A. Benson, H. K. Hoffschulte, and M. Muller. 1992. Biochemical analysis of the biogenesis and function on the *Escherichia coli* export factor SecY. *Eur. J. Biochem.* 207:803-811.
- Weiss, B. D., M. A. Capage, M. Kessel, and S. A. Benson. 1994 Isolation and characterization of generalized transducing phage for *Xanthomonas campestris* pv *campestris* *J. Bacteriol.* 176:3354-3359
- Peters, J. E. and S. A. Benson. 1995 Redundant transfer of F \square plasmids occurs between *Escherichia coli* cells during nonlethal selections. *J. Bacteriol.* 177:847-850
- Peters, J. E. and S. A. Benson. 1995 Characterization of a new rho mutation that relieves polarity of Mu insertions *Mol. Microbiol.* 17:231-240
- Peters, J. E., I. M. Bartoszyk, S. Dheer and S. A. Benson. 1996. Redundant homosexual F transfer facilitates selection induced reversion of plasmid mutations. *J. Bacteriol.* 177:847-850
- Lou, K. L., N. Sainte, A. Prilipov, G. Rummel, S.A. Benson, J. P. Rosenbush and T. Schirmer. 1996. Structural and functional characterization of OmpF porin mutants selected for larger pore size: I Crystallographic analysis. *J. Mol. Biol. J. Biol. Chem.* 271:20669-20675
- Benson, S. A. 1997. Adaptive mutation: a general phenomena or special case. *Bioassay.* 19:9-11
- Benson, S. A., B. P. Higgins, C. S. Chae, and Y. Lin. 2001. Antibacterial synergy in rubricine: an extract from the roots of *Arnebia euchroma* a Chinese medicinal herb. In *Drug Discovery and Traditional Chinese Medicine: Science, Regulation, and Globalization.* Yuan Lin, ed. Kluwer Acad. Pub. 111-125
- Yang, N. S., K. F. Lin, and S. A. Benson. 2001. Chinese and western herbal medicine, past, present and future R&D: The joining of history culture and technology. *Journal Chinese Society of Traditional Veterinary Science*, March, 2001

Science Discipline Publications: Symposium Articles and Chapters in Books (Since 1990)

- Benson, S. A. 1997. Ultrastructure of bacteria. In *Principles of Medical Biology*, E. E. Bittar and N. Bittar eds. JAI Press Greenwich CN, Vol. 9A, p1-14
- Benson, S. A. 1997. Bacteria outer membranes and permeability. In *Principles of Medical Biology*, E. E. Bittar and N. Bittar eds. JAI Press Greenwich CN, Vol. 9A, p15-28
- Peters, J. E. and S. A. Benson. 1995. F plasmid transfer as a mechanism of adaptive mutation. In *Meeting Abstracts: Proceeding of the Eighteen Annual Mid-Atlantic Extrachromosomal Elements and Molecular Genetics Meeting.* Plasmid 34: 72
- Peters, J. E. and S. A. Benson. 1996. F plasmid copy number changes with host growth phase by redundant plasmid transfer. In *Meeting Abstracts: Proceeding of the Nineteenth Annual Mid-Atlantic Chromosomal Elements Meeting.* Plasmid 35;211.

- Rindal, M. and S. A. Benson. 1996. The isolation and characterization of novel rho mutants in Escherichia coli K-12. In Meeting Abstracts: Proceeding of the Nineteenth Annual Mid-Atlantic Chromosomal Elements Meeting. Plasmid 35;215.
- Dheer, S. and S. A. Benson. 1996. A comparison of the reversion of the same mutation when present on an F' and the chromosome during extended nonlethal selections. In Meeting Abstracts: Proceeding of the Nineteenth Annual Mid-Atlantic Chromosomal Elements Meeting. Plasmid 35;216.
- Benson, S. A., B. P. Higgins, C. S. Chae, and Y. Lin. 2001. Antibacterial synergy in Rubricine: an extract from the roots of Arnebia euchroma a Chinese medicinal herb. In Drug Discovery and Traditional Chinese Medicine: Science, Regulation, and Globalization. Yuan Lin, ed. Kluwer Acad. Pub. 111-125
- Yang, N. S., K. F. Lin, and S. A. Benson. 2001. Chinese and western herbal medicine, past, present and future R&D: The joining of history culture and technology. Journal Chinese Society of Traditional Veterinary Science, March, 2001

Other Professional Teaching Related Activities US,

- Calibrated Peer Review Advisory Committee 2006-2011
- American Society of Microbiology, Chair International Education Committee 2011-2013
- American Society of Microbiology, International Education Committee 2008-2011
- American Society of Microbiology, review committee for International Leadership Fellowships 2009, 2010, 201, 2012, 2013
- American Society of Microbiology, Carski Award selection committee, 2007-2009
- Co-Chair College Board, AP-Biology Curriculum and Assessment Development Committee 2008-2011
- Co-Chair College Board, AP-Biology Redesign Commission 2007-2006
- Executive Working Committee American Society of Microbiology, Biological Scholars Program 2008
- Advisory Committee for Center for STEM Education, a national initiative, 2008-2006
- Co-director founder of the SENCER (Science Education for New Civic Engagement and Responsibility) institute on Scholarship in Teaching and Learning (SoTL) 2007
- Steering committee and faculty for the American Society for Microbiology Scholars in Residence Program , 2007, 2006, 2005, Summer institute on Scholarship on Teaching and Learning
- Steering committee member for the NSF Funded UCLA Calibrated Peer Review (CPR) educational tool, 2007-2006
- University of Maryland lead member for the TEAGLE Multi-University Technology Fluency Commission 2007-2006
- Councilor Division-W (Education) American Society for Microbiology, 2009-2007
- College Board ETS AP-Biology test review committee 2007, 2005
- College Board AP-Biology Test translation committee, 2007
- College Board AP-Biology Test question leader and reader, 2006-1998
- Chair Division-W (Education) American Society for Microbiology, 2003
- Quality Undergraduate Education (QUE) Committee, National Association of System Heads (NASH) faculty consultant, 2004; 2003, 2002
- Chair ASM Undergraduate Education Committee of the Board of Education (ASM) 2003-2000,
- Chair ASM International Education, International Board 2011-2014
- Chair ASM International Education, Chair Education Board 2014-2016

Teaching Awards

- American Society for Microbiology, Carski Teaching Award 2011
- University of Maryland System Regents Faculty Teaching Award, 2003

- CASE-Carnegie Foundation for the Advancement of Teaching, Maryland Professor of the Year, 2002
- Carnegie Academy for the Scholarship of Teaching and Learning (CASTL) Carnegie Scholar 2001-2002
- University nominee for the Carnegie U.S. Professor of the Year Award, 1998
- Finalist in University Advisor Award from the UMCP Parents Association 1996
- Finalist in University Teacher Award from the UMCP Parents Association 1996
- College of Life Sciences Teaching Award, 1996
- CTE-Lilly Teaching Fellow 1993-1994

Previous Funded Educational Projects (last 10 years)

- 2010–2013 MADE-CLEAR: Maryland and Delaware Climate Change Education, Assessment and Research: Climate Change Education Program (CCEP), PI- Nancy Shapiro National Science Foundation S. Benson Co-PI Benson
- 2012–2017 MADE-CLEAR: Maryland and Delaware Climate Change Education, Assessment and Research: Climate Change Education Program (CCEP), National Science Foundation \$999,949 PI- Nancy Shapiro National Science Foundation S. Benson Co-PI Benson
- 2012-2017 The CIRTL Network: 25 Research Universities Preparing a National Faculty to Advance STEM Undergraduate Learning, National Science Foundation 5.2 million dollars, UM (S. Benson) UM lead 25,000 sub-contract

Courses Taught (since 2000) University of Maryland College Park

University Teaching II, Spring, 2015, 2016, University of Macau, Macau SAR

University Teaching I, Fall 2014, 2015, University of Macau, Macau SAR

Fundamentals of University Teaching, UTLP Spring 2004, 2005, 2006, 2007, 2008, 2010, 2011, 2012, 2013

Laos: The Value of Water: Culture and Sustainable Development in Laos, Winter-term Study Abroad 2008

Microbes and Society, (BSCI122) a science general education course for non-majors Spring 2000, 2002, 2003, 2004, 2005, 2006, 2007

University Teaching and Learning (UNIV798), a graduate seminar course on pedagogy and university teaching, 2005, 2006, 2007

Principles of Transmission Genetics (LFSC630) a graduate on-line Internet-course for high school teachers 2002, 2003, 2004, 2005, 2006, 2007

Technology and the Environment; The Hydrology, Biology and Politics of the Mekong River Basin (a.k.a. The Mekong Course (WRLD235A) 2005, 2007; A team-taught general education interdisciplinary course.

Traditional Chinese Medicine (CPSL218 colloquium), 2005

The Value of Water: Culture and Sustainable Development in South East Asia, (GVPT388, WRLD 338a) Winter-term Study Abroad Course; 2006

Technology and the Environment: To Stem the Flow: The Nile, Technology, Politics, and the Environment [a.k.a. The Nile course] (UNIV138A); A team-taught general education interdisciplinary course on the Nile river basin, 2001, 2003

Pedagogy and Learning, (MICB688), a graduate seminar course on STEM university teaching, 2003

Principles of Genetics (BSCI222), a sophomore level genetics course for majors 2001, 2002,