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Engineering & Scientific Consulting

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Professional Profile

Dr. Svedlund is a materials engineer who specializes in biomaterials. She has diverse experience in the areas of polymer-based biomaterials, polymer chemistry, polymer characterization, hydrogel materials, surface science and micropatterning, tissue engineering and regenerative medicine, mineralization and bone formation, and the in vitro characterization of material interactions with cells.

Dr. Svedlund's background in Materials Science and Engineering has also provided her with knowledge and experience in the areas of material failure analysis, mechanical behavior of materials, material selection and design, and material characterization.

In her doctoral research, she synthesized and characterized multivalent conjugate molecules of a peptide growth factor conjugated to a polymer backbone chain. Through this research she gained expertise in polymer chemistry, bioconjugate chemistry, and polymer characterization. She has extensive expertise in size exclusion chromatography – multi-angle light scattering (SEC-MALS) characterization of polymers, including conjugate molecules and branched molecules. Additionally, she gained experience in the culture of mammalian and human cell lines, including embryonic and induced pluripotent stem cells, and in vitro assays for examining cell viability, proliferation, and function.

Dr. Svedlund has a B.S. in Materials Science and Engineering from the University of Florida and M.S. and Ph.D. degrees in Materials Science and Engineering from the University of California, Berkeley.

Academic Credentials & Professional Honors

M.S., Materials Science and Engineering, University of California, Berkeley, 2016

Ph.D., Materials Science and Engineering, University of California, Berkeley, 2016

B.S., Materials Science and Engineering, University of Florida, 2010

National Science Foundation Graduate Research Fellowship, 2012-2015

Achievement Rewards for College Scientists (ARCS) Fellowship, 2010-2012

National Defense Science and Engineering Graduate Fellowship, awarded 2012

National Science Foundation Materials World Network Scholarship, 2009

Professional Affiliations

Biomedical Engineering Society (BMES)

Publications

Feature Article, Expert Insights: “A Picture Is Worth a Thousand Words—Using Imaging to Support Your Case.” Kevin Ong and Felicia L. Svedlund, DRI Rx for the Defense, Volume 28, Issue 1, March 13, 2020

Bowers M, Ganot G, Malito L, Kondori B, Anyanwu E, Svedlund F, James B. Failure Analysis of Medical Devices. *J Fail. Anal. and Preven.* 22, 154–180 (2022). <https://doi.org/10.1007/s11668-021-013>

Svedlund FL, Altiok EI, Healy KE. Branching analysis of multivalent conjugates using size exclusion chromatography - multi-angle light scattering. *Biomacromolecules*. 2016 (accepted).

Svedlund FL. Synthesis and Characterization of Multivalent Conjugates. Ph.D. Dissertation, University of California, Berkeley, May 2016.

Altiok EI, Santiago-Ortiz JL, Svedlund FL, Zbinden A, Jha AK, Bhatnagar D, Loskill P, Jackson WM, Schaffer DV, Healy KE. Multivalent hyaluronic acid bioconjugates improve sFit-1 activity in vitro. *Biomaterials*. 2016 Jul 31; 93:95-105.

Ma Z, Wang J, Loskill P, Huebsch N, Koo S, Svedlund FL, Marks NC, Hua EW, Grigoropoulos CP, Conklin BR, Healy KE. Self-organizing human cardiac microchambers mediated by geometric confinement. *Nature Communications*. 2015 Jul 14; 6:7413

Jha AK, Mathur A, Svedlund FL, Ye J, Yeghiazarians Y, Healy KE. Molecular weight and concentration of heparin in hyaluronic acid-based matrices modulates growth factor retention kinetics and stem cell fate. *Journal of Controlled Release*. 2015 Jul 10; 209:308-316.

Thula TT, Svedlund FL, Rodriguez DE, Podschun J, Pendi L, Gower LB. Mimicking the Nanostructure of Bone: Comparison of Polymeric Process-Directing Agents. 2010 Dec 27; 3(1):10-35.

Conference Proceedings and Presentations

Svedlund FL, Jha A, Healy KE. Multivalent Conjugates of Mechano-Growth Factor with Cardioprotective Effects. First Annual ARCS Scholar Symposium, May 2015.

Svedlund FL, Altiok E, Zbinden A, Healy KE. SEC-MALS Characterization of Hyaluronic Acid-Based Multivalent Conjugates. Wyatt Technology's San Francisco Bay Area Protein and Biotech User Meeting, February 2015.

Svedlund FL, Wang J, Lin J, Healy KE. A Synthetic, Micropatterned Culture Surface for Embryonic Stem Cells. Annual Meeting of the Biomedical Engineering Society, October 2012.

Svedlund FL, Wang J, Lin J, Healy KE. A Simple, Synthetic, Micropatterned Surface for Embryonic Stem Cell Culture. Annual Meeting of the Polymer Networks Group, August 2012.

Svedlund FL, Irwin EF, Wang J, Healy KE. A Synthetic, Micro-patterned Surface for Embryonic Stem Cells. Spring Meeting of the Materials Research Society, April 2012.

Feuerstadt P, Aroniadis OC, Svedlund FL, et al. Mo1950 HETEROGENEITY OF RANDOMIZED CONTROLLED TRIALS OF FECAL MICROBIOTA TRANSPLANTATION (FMT) IN RECURRENT CLOSTRIDIUM DIFFICILE INFECTION: A SYSTEMATIC REVIEW. *Gastroenterology*. 2020;158(6):S-

990.

Feuerstadt P, Aroniadis OC, Svedlund FL, Garcia M, Stong L, Boules M, Khanna S. Heterogeneity of Randomized Controlled Trials of Fecal Microbiota Transplantation in Recurrent *Clostridioides difficile* Infection. *Digestive Diseases and Sciences*. 2021 Jul 18:1-8.

Book Chapters

Bowers, M, Ganot, G, Malito, L, Kondori, B, Anyanwu, E, Svedlund, F, James, B, "Failure Analysis of Medical Devices," *Analysis and Prevention of Component and Equipment Failures*. ASM Handbook, Volume 11A, ASM International, 2021, p. 736 – 753

Khanna S, Aroniadis OC, Garcia M, Svedlund FL, et al. Mo1951 REPORTING OF RANDOMIZED CONTROLLED TRIAL METHODOLOGICAL CHARACTERISTICS OF FECAL MICROBIOTA TRANSPLANTATION (FMT) FOR RECURRENT CLOSTRIDIoidES DIFFICILE INFECTION (RCDI). *Gastroenterology*. 2020;158(6):S-990-S-991.