

Stanford



Santiago Correa

Postdoctoral Scholar, Materials Science and Engineering

Bio

BIO

Santiago (Santi) is interested in the intersection of materials science and immunotherapy, and is working to develop injectable hydrogels to stimulate the immune system to recognize and eliminate cancer. Santi is especially interested in leveraging the unique drug delivery capabilities provided by such materials systems in order to explore combination immunotherapy and the role of release kinetics on therapeutic efficacy and safety.

HONORS AND AWARDS

- Siebel Scholar, Siebel Foundation (2018)
- Sloan UCEM Fellow, Alfred P. Sloan Foundation (2016)
- Lemelson Engineering Presidential Fellowship, MIT (2012)
- National Science Foundation (NSF) Graduate Research Fellowship, National Science Foundation (2012)
- Science, Technology, and Research Scholars Fellowship, Yale (2010)

PROFESSIONAL EDUCATION

- Doctor of Philosophy, Massachusetts Institute of Technology (2018)
- BS, Yale University, Biomedical Engineering (2012)

Research & Scholarship

LAB AFFILIATIONS

- Eric Appel, Supramolecular (Bio)Materials (10/22/2018)

Publications

PUBLICATIONS

- **Consistent tumorigenesis with self-assembled hydrogels enables high-powered murine cancer studies.** *Communications biology*
Grosskopf, A. K., Correa, S., Baillet, J., Maikawa, C. L., Gale, E. C., Brown, R. A., Appel, E. A.
2021; 4 (1): 985
- **Translational Applications of Hydrogels.** *Chemical reviews*
Correa, S., Grosskopf, A. K., Lopez Hernandez, H., Chan, D., Yu, A. C., Stapleton, L. M., Appel, E. A.
2021
- **Full closed loop open-source algorithm performance comparison in pigs with diabetes.** *Clinical and translational medicine*
Lal, R. A., Maikawa, C. L., Lewis, D., Baker, S. W., Smith, A. A., Roth, G. A., Gale, E. C., Stapleton, L. M., Mann, J. L., Yu, A. C., Correa, S., Grosskopf, A. K., Liang, et al

2021; 11 (4): e387

- **Injectable Supramolecular Polymer-Nanoparticle Hydrogels for Cell and Drug Delivery Applications.** *Journal of visualized experiments : JoVE*
Meis, C. M., Grosskopf, A. K., Correa, S., Appel, E. A.
2021
- **Lipidome-based Targeting of STAT3-driven Breast Cancer Cells Using Poly-L-glutamic acid-coated Layer-by-Layer Nanoparticles.** *Molecular cancer therapeutics*
Tosic, I., Heppler, L. N., Egusquiaguirre, S. P., Boehnke, N., Correa, S., Costa, D. F., Grossman Moore, E. A., Pal, S., Richardson, D. S., Ivanov, A. R., Haas-Kogan, D. A., Nomura, D. K., Hammond, et al
2021
- **Rational design of multistage drug delivery vehicles for pulmonary RNA interference therapy** *INTERNATIONAL JOURNAL OF PHARMACEUTICS*
Sofia Silva, A., Shopsowitz, K. E., Correa, S., Morton, S. W., Dreaden, E. C., Casimiro, T., Aguiar-Ricardo, A., Hammond, P. T.
2020; 591: 119989
- **An ultrafast insulin formulation enabled by high-throughput screening of engineered polymeric excipients.** *Science translational medicine*
Mann, J. L., Maikawa, C. L., Smith, A. A., Grosskopf, A. K., Baker, S. W., Roth, G. A., Meis, C. M., Gale, E. C., Liong, C. S., Correa, S., Chan, D., Stapleton, L. M., Yu, et al
2020; 12 (550)
- **Nanoparticles Presenting Potent TLR7/8 Agonists Enhance Anti-PD-L1 Immunotherapy in Cancer Treatment.** *Biomacromolecules*
Smith, A. A., Gale, E. C., Roth, G. A., Maikawa, C. L., Correa, S. n., Yu, A. C., Appel, E. A.
2020
- **A co-formulation of supramolecularly stabilized insulin and pramlintide enhances mealtime glucagon suppression in diabetic pigs.** *Nature biomedical engineering*
Maikawa, C. L., Smith, A. A., Zou, L. n., Roth, G. A., Gale, E. C., Stapleton, L. M., Baker, S. W., Mann, J. L., Yu, A. C., Correa, S. n., Grosskopf, A. K., Liong, C. S., Meis, et al
2020
- **Layer-by-layer nanoparticles for the non-toxic delivery of interleukin-12 to orthotopic ovarian cancer**
Smith, S., Barberio, A., Irvine, D., Correa, S., Nguyen, C., Melo, M., Tokatlian, T., Hammond, P.
BMC.2019
- **Binary Targeting of siRNA to Hematologic Cancer Cells In Vivo Using Layer-by-Layer Nanoparticles** *ADVANCED FUNCTIONAL MATERIALS*
Choi, K., Correa, S., Min, J., Li, J., Roy, S., Laccetti, K. H., Dreaden, E., Kong, S., Heo, R., Roh, Y., Lawson, E. C., Palmer, P. A., Hammond, et al
2019; 29 (20)
- **Solution Conditions Tune and Optimize Loading of Therapeutic Polyelectrolytes into Layer-by-Layer Functionalized Liposomes** *ACS NANO*
Correa, S., Boehnke, N., Deiss-Yehiely, E., Hammond, P. T.
2019; 13 (5): 5623–34
- **Binary Targeting of siRNA to Hematologic Cancer Cells In Vivo using Layer-by-Layer Nanoparticles.** *Advanced functional materials*
Choi, K. Y., Correa, S. n., Min, J. n., Li, J. n., Roy, S. n., Laccetti, K. H., Dreaden, E. n., Kong, S. n., Heo, R. n., Roh, Y. H., Lawson, E. C., Palmer, P. A., Hammond, et al
2019; 29 (20)
- **Theranostic Layer-by-Layer Nanoparticles for Simultaneous Tumor Detection and Gene Silencing.** *Angewandte Chemie (International ed. in English)*
Boehnke, N. n., Correa, S. n., Hao, L. n., Wang, W. n., Straehla, J. P., Bhatia, S. N., Hammond, P. T.
2019
- **RNA-Peptide nanoplexes drug DNA damage pathways in high-grade serous ovarian tumors.** *Bioengineering & translational medicine*
Dreaden, E. C., Kong, Y. W., Quadir, M. A., Correa, S. n., Suárez-López, L. n., Barberio, A. E., Hwang, M. K., Shi, A. C., Oberlton, B. n., Gallagher, P. N., Shopsowitz, K. E., Elias, K. M., Yaffe, et al
2018; 3 (1): 26–36
- **Engineering nanolayered particles for modular drug delivery.** *Journal of controlled release : official journal of the Controlled Release Society*
Correa, S. n., Dreaden, E. C., Gu, L. n., Hammond, P. T.
2016; 240: 364–86

- **Layer-by-layer assembled fluorescent probes in the second near-infrared window for systemic delivery and detection of ovarian cancer.** *Proceedings of the National Academy of Sciences of the United States of America*
Dang, X. n., Gu, L. n., Qi, J. n., Correa, S. n., Zhang, G. n., Belcher, A. M., Hammond, P. T.
2016; 113 (19): 5179–84

- **Highly scalable, closed-loop synthesis of drug-loaded, layer-by-layer nanoparticles.** *Advanced functional materials*
Correa, S. n., Choi, K. Y., Dreaden, E. C., Renggli, K. n., Shi, A. n., Gu, L. n., Shopsowitz, K. E., Quadir, M. A., Ben-Akiva, E. n., Hammond, P. T.
2016; 26 (7): 991–1003

- **Tumor-Targeted Synergistic Blockade of MAPK and PI3K from a Layer-by-Layer Nanoparticle.** *Clinical cancer research : an official journal of the American Association for Cancer Research*
Dreaden, E. C., Kong, Y. W., Morton, S. W., Correa, S. n., Choi, K. Y., Shopsowitz, K. E., Renggli, K. n., Drapkin, R. n., Yaffe, M. B., Hammond, P. T.
2015; 21 (19): 4410–19