

Diego A. Rey, PhD

LinkedIn Profile: www.linkedin.com/in/diegorey

Industry Experience

Chief Executive Officer

Gemini Therapeutics, San Francisco, CA

www.geminithera.com

Jul-25 – present

Gemini Therapeutics is developing aldoxorubicin, a next-generation chemotherapy designed to deliver doxorubicin directly to tumors. After intravenous administration, aldoxorubicin binds to a naturally occurring blood protein that accumulates in tumors. The active chemotherapy is then released in the tumor. Aldoxorubicin has completed 16 clinical trials and has received 5 orphan drug designations.

Co-Founder and Chief Scientific Officer

Endpoint Health, Palo Alto, CA

www.endpointhealth.com

Jan-19 – Jun-24

Endpoint Health is a precision therapeutics company. We first worked to better understand the biological heterogeneity in diseases, then built diagnostics to stratify patients into biologically-defined subgroups, and then built a portfolio of therapies where each therapy is better matched to the biology of each subgroup. This “precision first” method results in higher levels of efficacy for each therapy.

Part-Time Partner

Visiting Partner

Y Combinator, Mountain View, CA

www.ycombinator.com

Oct-18 – Jan-21

Oct-17 – Oct-18

YC is a startup accelerator. It helps founders build their companies. YC has invested in over 5,000 companies with a combined valuation of over \$600B and who have created over 90,000 jobs. At YC I was the first partner with a life sciences background helped there to help life sciences and healthcare companies.

Head of Research

GeneWEAVE Biosciences, a Division of Roche Molecular Systems, Inc. Los Gatos, CA

www.roche.com

Aug-15 – Dec-17

Roche is the world's largest biotech company and the world leader in in vitro diagnostics.

Founder and Chief Technology Officer
GeneWeave Biosciences, Los Gatos, CA
www.geneweave.com

Jun-10 – Aug-15

GeneWEAVE developed Smarticles™ technology, a biological reagent that enables the development of diagnostic tests capable of determining the antibiotic susceptibility of bacteria directly from patient specimens in a matter of hours, a process that normally takes days. GeneWEAVE's vivoDx™ in vitro diagnostic system received FDA authorization on December 5, 2019:
<https://www.fda.gov/news-events/press-announcements/fda-authorizes-marketing-diagnostic-test-uses-novel-technology-detect-mrsa-bacteria>
Roche Molecular Diagnostics acquired GeneWEAVE in August 2015:
<https://www.genengnews.com/news/roche-to-acquire-geneweave-for-up-to-425m/>

Academic Research Experience

Graduate Research Assistant/PhD Candidate

Aug-04 – Jun-10

Batt Laboratory, *Cornell University*, Ithaca, NY
<http://blogs.cornell.edu/battlab/>

My research involved developing novel strategies for biofunctionalization of nanomaterials including carbon nanotubes, quantum dots, magnetic, and gold nanoparticles and exploring their potential as cancer imaging agents and therapeutics *in vitro* and *in vivo*.

Graduate Research Assistant

Jun-05 – Sep-05

New York Presbyterian Hospital, *Cornell Weill Medical College*, New York, NY.
www.med.cornell.edu

Conducted clinical research on Transurethral Microwave Thermotherapy and observed various surgical operations.

Undergraduate Researcher

Jun-03 – Sep-03

Cornell Nanobiotechnology Center, *Cornell University*, Ithaca, NY
www.nbtc.cornell.edu

Developed microfluidics for interfacing with nano-filtration devices.

Undergraduate Researcher

Jun-02 – Sep-02

Cornell Nanoscale Facility, *Cornell University*, Ithaca, NY
www.cnf.cornell.edu

Fabricated and tested nano-filtration devices.

<http://www.nnn.org/sites/default/files/files/2002NNUNREUra.pdf> (Page 22)

Volunteering

Advisory Council Member

Jul-24 – present

Engineering College at Cornell University
<https://www.engineering.cornell.edu>

The Engineering College Council was created as an advisory board to the dean in the 1940s. Their function is to advise the college administration on long-range planning and development in all aspects of the program, notably instruction, research, and, increasingly, cooperative ventures with industry.

Advisory Council Member	May-23 – present
<i>Meinig School of Biomedical Engineering at Cornell University</i>	
https://www.bme.cornell.edu	
The mission of the BME School is to educate students to understand the human body as an integrated multiscale system and the mechanisms of disease through quantitative engineering approaches, and to use that understanding to design and develop better therapeutics, devices, and diagnostics to improve human health.	
Advisor	Jul-06 – Jun-10
<i>Nanotechnology Law & Business Journal Advisory Board, Pasadena, CA</i>	
www.nanolabweb.com	
The Nanotechnology Law & Business Journal is a peer-reviewed journal devoted to the legal, business, and policy aspects of small-scale technologies.	
Editor, Spanish Language Translator	Aug-05 – Jun-10
<i>Nanooze!, Ithaca, NY</i>	
www.nanooze.org	
Nanooze is an online/print magazine created to get kids excited about science and especially nanotechnology. The website had over 100,000 unique visitors in 2008.	
Chairman	Nov-08 – May-10
<i>Big Red Venture Fund Technical Advisory Board, Ithaca, NY</i>	
https://johnson.campusgroups.com/brv	
BRV's technical advisory board is composed of an interdisciplinary team of doctoral students who conduct technical due diligence on BRV's deal flow.	
Vice President	2001 – 2002
Member	2000 – 2004
<i>UCSB Society of Hispanic Professional Engineers</i>	
https://www.losingenierosucsb.org	
Los Ingenieros (LI) is a UCSB student organization founded in 1978 by Latino engineering students as a support group. The organization aims to advance its members' education, particularly within the Latin@ community, and promotes STEM fields to students from elementary to high school through outreach activities, inspiring the next generation of Latin@ STEM graduates. In 2002 LI was recognized as UCSB's Organization of the Year.	
Activities Chair	2001 – 2002
Member	2000 – 2004
<i>UCSB National Society of Black Engineers</i>	
https://sites.google.com/view/nsbeucsb/	
NSBE's mission is to increase the number of culturally responsible Black Engineers & Scientists who excel academically, succeed professionally and positively impact the community.	

Patents (27 issued)

US20230290452A1 "Electronic Health Record (EHR)-Based Classifier for Acute Respiratory Distress Syndrome"

US20220351806A1 "Biomarker Panels for Guiding Dysregulated Host Response Therapy"

US20220344013A1 "Directing Medical Diagnosis and Intervention Recommendations"

WO2022212890A1 "Companion Diagnostic and Therapies for Dysregulated Host Response"

US 10,718,003 B2 "Detecting an analyte in a flash and glow reaction"

AU 2014243796 B2 "Non-replicative transduction particles and transduction particle-based reporter systems"

AU 2014249022 C1 "Systems and methods for detection of cells using engineered transduction particles"

AU 2018203991 B2 "Systems and methods for detection of cells using engineered transduction particles"

AU 2018214156 B1 "Systems and methods for detection of cells using engineered transduction particles"

CN 105209915 B "Engineering transduction using particle detection systems and methods Cells"

EP 2972354 B1 "Detection apparatus and method"

EP 3134722 B1 "Reagent cartridge"

ES 2703601 T3 "Apparatus and method of detection"

JP 6431035 B2 "Reporter systems based on non-replicative transducing particles and transduction particles"

MX 360560 B "Non-replicative transduction particles and transduction particle-based reporter systems"

RU 2661101 C2 "Non-replicative transduction particles and transduction particle-based reporter systems"

RU 2666926 C2 "Method of calibrating and measuring signal and device for detecting and/or identifying target bacteria (options)"

US 10125386 B2 "Reagent cartridge and methods for detection of cells"

US 10179939 B2 "Growth-independent detection of cells"

US 10227661 B2 "Sequence-specific detection and phenotype determination"

US 10227662 B2 "Non-replicative transduction particles and transduction particle-based reporter systems"

US 10227663 B2 "Non-replicative transduction particles and transduction particle-based reporter systems"

US 10240212 B2 "Systems and methods for detection of cells using engineered transduction particles"

US 9133497 B2 "Systems and methods for detection of cells using engineered transduction particles"

US 9388453 B2 "Non-replicative transduction particles and transduction particle-based reporter systems"

US 9481903 B2 "Systems and methods for detection of cells using engineered transduction particles"

US 9540675 B2 "Reagent cartridge and methods for detection of cells"

US 9546391 B2 "Systems and methods for detection of cells using engineered transduction particles"

US 9752200 B2 "Non-replicative transduction particles and transduction particle-based reporter systems"

US 9771622 B2 "Non-replicative transduction particles and transduction particle-based reporter systems"

US 9879328 B2 "Mechanisms of antimicrobial susceptibility"

Peer Reviewed Publications

Siuba MT, Bulgarelli L, Duggal A, Cavalcanti AB, Zampieri FG, **Rey DA**, Lucena WDR, Maia IS, Paisani DM, Laranjeira LN, Neto AS, Deliberato RO. Differential Effect of PEEP Strategies in ARDS Patients: A Bayesian Analysis of Clinical Subphenotypes. *Chest*. 2024 May 18:S0012-3692(24)00630-5

Yao, Lijing; **Rey, Diego Ariel**; Bulgarelli, Lucas; Kast, Rachel; Osborn, Jeff; Van Ark, Emily; Fang, Li Tai; Lau, Bayo; Lam, Hugo; Teixeira, Leonardo Maestri. Gene Expression Scoring of Immune Activity Levels for Precision Use of Hydrocortisone in Vasodilatory Shock. *Shock* (2022) 57(3):384-91

Duggal, Abhijit; Kast, Rachel; Van Ark, Emily; Bulgarelli, Lucas; Siuba, Matthew T; Osborn, Jeff; **Rey, Diego Ariel**; Zampieri, Fernando G; Cavalcanti, Alexandre Biasi; Maia, Israel. Identification of acute respiratory distress syndrome subphenotypes de novo using routine clinical data: a retrospective analysis of ARDS clinical trials. *BMJ open* (2022) 12(1):e053297

Bulgarelli, Lucas; Kast, Rachel; Van Ark, Emily; Osborn, Jeff; **Rey, Diego**; Siuba, Matthew; Duggal, Abhijit; Neto, Ary Serpa; Deliberato, Rodrigo. 1089: HETEROGENEITY OF EFFECT OF CISATRACURIUM BY SUBPHENOTYPES DERIVED FROM CLINICAL DATA IN ARDS. *Critical Care Medicine* (2022) 50(1):543

Kast, Rachel; Bulgarelli, Lucas; Van Ark, Emily; Osborn, Jeff; **Rey, Diego**; Duggal, Abhijit; Siuba, Matthew; Biasi, Alexandre; Zampieri, Fernando; Maia, Israel. 12: HETEROGENEITY OF EFFECT OF PEEP STRATEGY BY SUBPHENOTYPES DERIVED FROM CLINICAL DATA IN ARDS. *Critical Care Medicine* (2022) 50(1):6

Kast, Rachel; Bulgarelli, Lucas; Van Ark, Emily; Osborn, Jeff; **Rey, Diego**; Siuba, Matthew; Duggal, Abhijit; Tomazini, Bruno; Bueno, Flavia; Biasi, Alexandre. 281: SUBPHENOTYPES IN COVID-19 ARDS: SECONDARY ANALYSIS OF A RANDOMIZED CLINICAL TRIAL. *Critical Care Medicine* (2022) 50(1):126

Bulgarelli, Lucas; Kast, Rachel; Van Ark, Emily; Osborn, Jeff; Siuba, Matthew; Duggal, Abhijit; Neto, Ary Serpa; **Rey, Diego**; Deliberato, Rodrigo. 1124: HETEROGENEITY OF EFFECT OF NUTRITION STRATEGIES BY SUBPHENOTYPES DERIVED FROM CLINICAL DATA IN ARDS. *Critical Care Medicine* (2022) 50(1):560

Villa CH, Dao T, Ahearn I, Fehrenbacher N, Casey N, **Rey DA**, Korontsvit T, Zakhaleva V, Batt CA, Philips MR, Scheinberg DA. Single walled carbon nanotubes deliver peptide antigen into dendritic cells and enhance IgG responses to tumor-associated antigens. *ACS nano*. (2011) 5(7):5300-11

Adsul M, **Rey DA**, D. V. Gokhale. Combined strategy for the Dispersion/dissolution of single walled carbon nanotubes and cellulose in water. *J. Mater. Chem.* (2011) 21:2054-6

Rey DA, Strickland AD, Kirui KD, Nuttawee N, Batt, CA. *In vitro* Self-Assembly of Gold Nanoparticle-Coated Poly(3-hydroxybutyrate) Granules Exhibiting Plasmon-Induced Thermo-Optical Enhancements. *ACS Applied Materials and Interfaces* (2010) 2(7):1804-10

Ruggiero A, Villa CH, Bander E, **Rey DA**, Bergkvist M, Batt CA, Manova-Todorova K, Deen WM, Scheinberg DA, McDevitt MR. Paradoxical glomerular filtration of carbon nanotubes. *PNAS* (2010) 107(27):12369-74

Kirui KD, **Rey DA**, Batt, CA. Gold hybrid nanoparticles for targeted phototherapy and cancer imaging. *Nanotechnology* (2010) 21:105105

Villa CH, McDevitt MR, Escoria FE, **Rey DA**, Bergkvist M, Batt CA, Scheinberg DA. Synthesis and Biodistribution of Oligonucleotide-Functionalized, Tumor-Targetable Carbon Nanotubes. *Nano Letters* (2008) 8(12):4221-4228

Kim I, Park YH, **Rey DA**, Batt CA. Silica-deposited phospholipid nanotubules as a plausible drug targeting system. *Journal of drug targeting* (2008) Nov;16(9):716-22

McDevitt MR, Chattopadhyay D, Jaggi JS, Finn RD, Zanzonico PB, Villa C, **Rey D**, Mendenhall J, Batt CA, Njardarson JT, Scheinberg DA. PET Imaging of Soluble Yttrium-86-labeled Carbon Nanotubes in Mice. *PLoS ONE* (2007) 2(9):e907

Hyun BR, Chen HY, **Rey DA**, Wise FW, Batt CA. Near-infrared fluorescence imaging with water-soluble Pb salt quantum dots. *J Phys Chem B* (2007) 111(20):5726-5730

Rey DA, Batt CA, Miller JC. Carbon nanotubes in biomedical applications. *Nanotech Law & Bus J* (2006) 3(3):263-292

Presentations

de Forest N, Shukla S, Cox H, Ghavami B, Clute-Reinig N, Chuc J, Scofield B, Dunphy K, Liu X, **Rey D**, Frei W. ID67. A Novel Transduction Particle-Based Reporter Assay Enables a Simple-to-Use Culture-Free MRSA Screening Test. *J. Mol. Diag.*, (2014) 16(6):742

Rey DA, Batt CA. Nickel nitrilotriacetate functionalized carbon nanotubes for reversible protein attachment (poster). American Institute of Chemical Engineers, Society for Biological Engineering, 2nd International Conference on Bioengineering and Nanotechnology (09/2006)

Villa CH, McDevitt MR, **Rey DA**, Mendenhall J, Ahearn I, Escorcia FE, Batt CA, Scheinberg DA. *Multimodal Functionalized Carbon Nanotubes for Targeted Self-assembly of Therapeutic Constructs* (presentation). Material Research Society, Fall Meeting (09/2007)

McDevitt MR, Cattopadhyay D, Jaggi JS, Finn RD, Zanzonico PB, Villa CH, **Rey DA**, Mendenhall J, Batt CA, Njardarson JT, Scheinberg DA. *Pharmacokinetics of Soluble Carbon Nanotubes in Mice* (presentation). Material Research Society, Fall Meeting (09/2007)

Rey DA, Sotiropoulou S, Batt CA. Carbon Nanotube-Protein Nano-Architectures for Cancer Cell-Specific Scaffolding (presentation). Material Research Society, Fall Meeting (09/2007)

Honors

Commencement Speaker	2017
Gave the commencement address to the UCSB class of 2017 of the colleges of Engineering and Sciences	
Tau Beta Pi	Sep-01 – Present
Engineering Honor Society. Awarded to the top 12.5% of the Junior class.	
Ruth L. Kirschstein National Research Service Award	2007-2010
National Institutes of Health Fellowship	3 years
Cornell SAGE Fellow	2005
Sloan Fellow	2004
Cornell Nanobiotechnology Center Fellow	2004

Education

Doctor of Philosophy, Biomedical Engineering	2012
Minors: Biophysics, Applied Engineering Physics	
<i>Cornell University, Ithaca, NY</i>	
Major Advisor: Carl A Batt	
Minor Advisors: George Malliaras, Scott Blanchard	

Dissertation: Biomedical applications of nanoparticle-polyhydroxyalkanoate synthase conjugates

Master of Science, Biomedical Engineering

2008

Cornell University, Ithaca, NY

Research topic: Biomedical applications of nanoparticle bioconjugates

Bachelor of Science in Electrical Engineering

University of California, Santa Barbara, CA

Concentration: Solid state materials and devices

2004, *cum laude*

Other Activities/Certifications/Interests

- AIARE Level 1 (Avalanche Safety) certified – backcountry ski and snowboard
- Basic Keelboat Sailing certified (American Sailing Association)
- Black belt in Tae Kwon Do
- Certified in SCUBA
- Home brewing
- Cycling