11/5/2026

JAMES C. COSTELLO, PH.D.

PROFESSOR OF PHARMACOLOGY
UNIVERSITY OF COLORADO ANSCHUTZ MEDICAL CAMPUS
12801 E. 17th Ave., Rm L18-6114
Mail Stop 8303
Aurora, CO 80045
(303)724-8619
JAMES.COSTELLO@CUANSCHUTZ.EDU

Research Interests
Systems biology, Bioinformatics, urological cancers, mathematical models, cancer genomics, data integration, algorithms, gene regulatory network inference, machine learning, and translating systems-level models into testable hypotheses.

EDUCATION

PhD	**Informatics,** Indiana University, Bloomington School of Informatics	August 2009
MS	**Bioinformatics,** Indiana University, Bloomington School of Informatics	August 2004
BS	**Biology,** University of Iowa	May 2002
BS	**Economics,** University of Iowa	May 2002

RESEARCH AND PROFESSIONAL APPOINTMENTS

Full Professor 2026 to present
University of Colorado Anschutz Medical Campus, Aurora, CO

Chief Science Officer and Co-Founder 2022 to present
OncoRx Insights

Co-Director of the Pharmacology Training Program
University of Colorado Anschutz Medical Campus, Aurora, CO 2022 to present

Visiting Professor (Courtesy appointment) 2021 to present
Erasmus Medical Center, Rotterdam, Netherlands

Co-Director of the Biostatistics and Bioinformatics Shared Resource 2019 to present
University of Colorado Cancer Center, Bioinformatics Core
University of Colorado Anschutz Medical Campus, Aurora, CO

University of Colorado Cancer Center Full Member 2017 to present

Training Faculty Member 2014 to present
Pharmacology and Molecular Medicine
Computational Biosciences
Cancer Biology
Biomedical Science Program
Medical Science Training Program
University of Colorado Anschutz Medical Campus, Aurora, CO

Associate Professor (Tenure awarded 2022) 2020 to 2026
University of Colorado Anschutz Medical Campus, Aurora, CO

CRIO Council Member
University of Colorado Anschutz Medical Campus, Aurora, CO 2022 to 2024

Director of Computational/Systems Biology DREAM Challenges 2013 to 2024
Sage Bionetworks, Seattle, WA

Assistant Professor 2014 to 2020
Department of Pharmacology

University of Colorado Anschutz Medical Campus, Aurora, CO

Consultant, Enbiotix 2012 to 2013
Cambridge, MA

Consultant, Selventa 2012 to 2013
Cambridge, MA

Instructor 2013 to 2013
Brigham and Women's Hospital
Harvard Medical School, Boston MA
Research Program of Men's Health: Aging and Metabolism

Postdoctoral Research Associate 2009 to 2013
HHMI/Boston University, Boston, MA
Advisor: James J. Collins, Ph.D.

Consultant, Vertex Pharmaceuticals 2011
Cambridge, MA

Research Associate/Graduate Student 2006 to 2009
Indiana University, Bloomington, IN
Advisors: Mehmet M Dalkilic, Ph.D. & Justen R Andrews, Ph.D.

Assistant Staff Scientist 2004 to 2006
Center for Genomics and Bioinformatics, Bloomington, IN

Associate Instructor/Graduate Student 2003 to 2004
Indiana University, Bloomington, IN
Advisor: Mehmet M Dalkilic, Ph.D.

HONORS, SPECIAL RECOGNITION, AND AWARDS

Collaborative Science Award, Department of Pharmacology	2025
EAU Best Paper on Fundamental Research Award	2024
Faculty Award in Teaching Excellence, Department of Pharmacology	2023
Faculty Award in Research Excellence, Department of Pharmacology	2022
Faculty Award in Research Excellence, Department of Pharmacology	2020
Winning team for the CD2H Idea Competition for the CTSA Program	2019
Rani Powers, Winner of the Ian Lawson Von Toch Memorial Award for Outstanding Student Paper	2018
Top 3 paper for the IMIA yearbook of Medical Informatics 2018 in the section 'Cancer Informatics'	2018
Elias Tillandz prize – best 2017 paper from the University of Turku	2018
Boettcher Investigator, Webb-Waring Biomedical Research Award	2015
Sage Bionetworks Young Investigator Award	2013
Best Poster Award at the Intl. Conf. for Systems Biology of Human Disease	2011
First Ph.D. awarded from IU School of Informatics	2009
NSF-IGERT Fellow in Evolution, Genomics, and Development	2009
Student Travel Grant for PSB, ISCB	2009
Student Travel Grant for CIBCB, IEEE	2007
Student Travel Grant for SDM, Lawrence Livermore National Laboratory	2006
IU School of Informatics Outstanding Teaching Award	2004
IU School of Informatics Outstanding Achievement Award	2004
IU GPSO Outstanding Graduate Student	2004
Indiana University (UITS) Consultant of the Month	2003
Two-time Track and Field Athletics All-American	2002

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

Association for Cancer Systems Biologists (Founder and Secretary)	2020 to present
American Society for Pharmacology and Experimental Therapeutics (Member)	2019 to present
American Association for Cancer Research (Member)	2014 to present
International Society for Computational Biology (Member)	2009 to present

MAJOR COMMITTEE AND SERVICE RESPONSIBILITIES

University of Colorado

IAB member, Cancer Biology PhD training Program	2026 to present
Department of Pharmacology Faculty Search Committee, Chair	2026
Department of Pharmacology Compensation Committee, Member	2026
Department of Pharmacology DFA Search Committee, Member	2026
Department of Pharmacology Equipment Committee, Member	2025 to present
Co-Director, Pharmacology and Molecular Medicine Training Program	2022 to present
Chair, Faculty Membership Committee for CPBS	2023 to present
Pharmacology and Molecular Medicine Program, Graduate Training Committee	2015 to present
Research Advisory Council	2019-2025
CRIO Council	2022-2024
Department of Pharmacology faculty search committee, Chair	2022, 2023
University of Colorado Cancer Center search committee for AD of Data Science	2020
University of Colorado Cancer Center strategic planning committee	2019
Biostatistics and Informatics faculty search committee	2019
Computational Bioscience Program postdoctoral research recruitment committee (Chair)	2018
Computational Bioscience Program admissions committee	2016-2018
Biomedical Sciences Program admissions committee	2017- 2022
Pharmacology Program retreat organizing committee (Chair 2016)	2015, 2016
Computational Bioscience Program preliminary exam committee (Chair 2018)	2015 - 2021
Department of Pharmacology faculty search committee	2014, 2016
Pharmacology Program graduate student admissions committee	2014 - 2020

Conference

Pacific Symposium on Biocomputing (Precision Medicine Session Program Committee)	2027
AACR (Bioinformatics, Computational Biology, AI, and Systems Biology subcommittee member)	2026
SACB 2027 (Organizing Committee Chair)	2026
SACB 2025 (Organizing Committee Chair)	2024
SACB 2022 (Organizing Committee Chair)	2022
ASPET 2021 (Co-Organizer, Systems Pharmacology session)	2021
SACB 2020 (Organizing Committee Chair)	2020
ACSB Committee Chair (Society Secretary)	2019-
ISMCO'20 program committee member	2020
RSG/DREAM conference (Organizing Committee)	2018-2022
ISMB program committee member	2018-
RSGDREAM program committee member	2017-
Power of Informatics to Advance Health Mini Symposium (Steering Committee)	2015- 2018
ISCB/Recomb/DREAM Conference, Session Chair	2015,2017
DREAM7, "NCI-DREAM Drug Sensitivity Prediction Challenge"	2012
DREAM5, "Gene Network Inference Challenge"	2010
Daphnia Genomics Consortium	2005,2007

Leadership and Volunteer Experience

Chair of the Education and Outreach Working Group through the CSBC	2022-2024
Led the Collab Lab at Sage Bionetworks on educational challenges	2022
Heart & Soul Climbing Competition – invited speaker	2020
American Cancer Society, Relay for Life - research speaker	2015
DSST (Denver) high school – Taught a class on predictive modeling in biomedicine	2015
Jim Holland Summer Enrichment Program in Biology	2005,2007,2009
IU Academic Fairness Committee Member	2002-2009
IU Graduate Curriculum Committee Member	2002-2006
Undergraduate Capstone Group Leader	2004
Lead Associate Instructor	2004
Graduate Informatics Student Association, Vice-President	2004
Volunteer Assistant Track and Field Coach, Indiana University	2003
University of Iowa Track and Field Captain	2002
Community Youth Leader, Cedar Rapids, IA	2000-2002

PATENTS

Title: COMPOSITIONS AND METHODS FOR IMPROVED TREATMENT OF PLATINUM-BASED CHEMOTHERAPEUTIC RESISTANT TUMORS
US Patent App. 18/237,705

REVIEW AND REFEREE WORK

Review Panel

NIH, MetNet U01 review panel, ZRG1 BCMT-A	2026
DoD, Prostate Cancer Research Program on the Immunotherapeutics – 2 (IT-2)	2026
K12 Internal review panel	2026
Cancer Prevention and Research Institute of Texas (CPRIT), Cancer Biology Panel	2026
University of Colorado Comparative Oncology Study Section	2026
Bladder Cancer Advocacy Network, Innovation Award Review Panel Member	2026
NIH, NCI, Cancer Genetics Study Section (ad hoc) - March	2026
NIH, NCI, Institutional Training and Education Review Panel	2026
DoD, CDMRP PCRP CMB-1, Idea Development Award, PCRP	2025
Boettcher Foundation Webb Waring Award	2022-2025
Bladder Cancer Advocacy Network (BCAN) Jon Quale Travel Fellowship Award	2025
NIH, NCI F Study Section	2025
NIH, NCI, Cancer Genetics Study Section (ad hoc) - February	2025
NIH, NCI F Study Section	2024
NIH, NCI F Study Section	2023
NIH, NCI, K99/R00, Pathway to Independence	2023
DoD, CDMRP PCRP CMB-1, Idea Development Award, PCRP	2023
Bladder Cancer Advocacy Network (BCAN) Scientific Review Group	2023
NIH, NCI, Cancer Genetics Study Section (ad hoc) - October	2022
NIH, NCI, Clinical and Translational Cancer Research, ZCA1 TCRB-R(O1) S	2022
NIH, NCI, Cancer Genetics Study Section (ad hoc) - March	2022
NIH, NCI, Informatics Technology in Cancer Research, ZCA1 SRB-X (J1) S	2021
NIH, NCI, Program Project I (P01) ZCA1 RPRB-L (M1)	2021
NIH, NCI, Pathway to Independence Award (Postdoctoral researchers) ZCA1 RTRB-U (01)	2020
NIH, SARS-COV-2 Serological Sciences Center of Excellence, ZCA1 RTRB-C (A1)	2020
NIH, NCI, Program Project I (P01) ZCA1 RPRB-L (J1) S	2020
NIH, NCI, CSBC U01 ZCA1 RTRB-U (M1)	2020
NIH, NCI, CSBC U01 ZCA1 RTRB-U (J1)	2020
Fonds de recherche du Québec, Review Panel Member	2020
Natural Sciences and Engineering Council of Canada	2018
Austrian Science Foundation	2018
Cancer League of Colorado	2018,2019
Luxembourg Institute of Health	2017
American Cancer Society, IRG review panel	2016-2025
NIH, NCI, Cancer Systems Biology Consortium U54 Research Centers, ZCA1 RTRB- R (O1)	2017
NIH, NCI, Cancer Systems Biology Consortium U54 Research Centers, ZCA1 RTRB- R (J3)	2016
Swiss National Science Foundation	2015,2016
Helmsley Charitable Trust	2015
Joslin Diabetes Center/Boston University internal grant review member	2013
Improver scoring review committee	2013

Journal Reviewer (ad hoc)

Science, Nature, PLoS Computational Biology, PLoS One, Journal of Biomedical Informatics, Bioinformatics, Journal of Proteome Research, Scientific Reports, Current Pharmaceutical Design, Pacific Symposium for Biocomputing, Algorithms, Oncotarget, BMC Cancer, Nature Communications, Nature Biotechnology, Autophagy, Computing Surveys, Journal of Molecular Medicine, Cancer Cell International, Foundations of Computing and Decision Sciences, Genes, FEBS Open Bio, BMC Medical Genomics, Molecular Pharmaceutics, Cell Reports, GigaScience, Pharmaceutics, Cancer Letters, Journal of Pharmacokinetics and Pharmacodynamics, Nature Cancer, Computational and Structural Biology Journal.

Editor for DREAM Gateway in F1000Research (2015-2021)
Guest editor for PLoS Computational Biology (2022)

Editor, special issue for Frontiers in Pharmacology (2023)

PRESENTATIONS AND INVITED LECTURES

Local

- "Targeting the Volume Regulated Anion Channel to improve platinum drug response" Ovarian Cancer Think Tank, Denver, CO, 2026
- "Targeting the MAP3K7 & CHD1 Prostate Cancer Molecular Subtype" Department of Pharmacology Cramer Symposium, AHSB, Aurora, CO. 2026
- "Integrating biological knowledge into matrix factorization" Department of Biomedical Informatics Retreat. AHSB, Aurora, CO. 2025
- "Intracellular control of Volume Regulated Anion Channels" Pharmacology Department Retreat. Nature and Science Museum, Denver, CO. 2025.
- "Nerves in cancer: Bladder cancer tumor innervation and potential therapeutic advances" UCCC COE-CARES. University of Colorado Anschutz Medical Campus, Aurora, CO. 2025
- "NPEPPS is a novel regulator of cisplatin response in treatment-resistant bladder cancer" Barbara Davis Center for Diabetes. University of Colorado Anschutz Medical Campus, Aurora, CO. 2022
- "Non-muscle invasive bladder cancer molecular subtypes predict differential response to intravesical Bacillus Calmette-Guerin" Multiplex Imaging Seminar Series. University of Colorado Anschutz Medical Campus, Aurora, CO. 2022
- "Vignettes from the Costello lab" Pediatric Heart Lung Lab. University of Colorado Anschutz Medical Campus, Aurora, CO. 2020
- "Computing Resources at the Anschutz Medical Campus" Panel Member. Department of Biostatistics and Informatics. University of Colorado Anschutz Medical Campus, Aurora, CO. 2019
- "Putting your –omic data into context" Department of Endocrinology. University of Colorado Anschutz Medical Campus, Aurora, CO. 2019
- "A systems biology approach to study aggressive molecular subtypes in prostate cancer" Donald King Symposium. University of Colorado Anschutz Medical Campus, Aurora, CO. 2019
- "Pathway analysis in context" Tumor Host Interaction Symposium. University of Colorado Anschutz Medical Campus, Aurora, CO. 2019
- "Everything you need to know about gene set enrichment analysis" BBSR University of Colorado Anschutz Medical Campus, Aurora, CO. 2018
- "GSEA-InContext: Identifying novel and common patterns in expression experiments" Bioinformatics Journal Club. University of Colorado Anschutz Medical Campus, Aurora, CO. 2018
- "Trisomy 21 results in upregulation of kynurenine and dysregulation of tryptophan metabolism" Linda Crnic Super Group. University of Colorado Anschutz Medical Campus, Aurora, CO. 2018
- "A systems biology approach to study aggressive subtypes in prostate cancer" Division of Endocrinology, Metabolism and Diabetes. University of Colorado Anschutz Medical Campus, Aurora, CO. 2017
- "Data integration and cancer systems biology" Integrative Biology Department. University of Colorado Denver, Denver. CO. 2017
- "Computational Approaches for Predicting Drug Sensitivities and Synergies from Genomics Data" Array BioPharma. Boulder, CO 2015.
- "Transcriptional Regulators Associated with Pathways: Setting a TRAP to Identify Gene Drug Targets" Front Range Computational and Systems Biology 2015 Symposium. Fort Collins, CO 2015.
- "Computational Approaches for Predicting Drug Sensitivities and Synergies" Cancer Biology Training Program. University of Colorado Anschutz Medical Campus, Aurora, CO. 2015.
- "Extracting Predictive Signatures from Heterogeneously Sampled Cancer Patient Data" University of Colorado Cancer Center, Aurora, CO. 2015.
- "Transcriptional Regulatory Associations with Pathways: Setting a TRAP to identify drug-gene targets" Division of Endocrinology, Metabolism and Diabetes. University of Colorado Anschutz Medical Campus, Aurora, CO. 2014.
- "Whole exome sequence analysis of 40 human bladder cancer cell lines" University of Colorado Cancer Center Retreat. University of Colorado Anschutz Medical Campus, Aurora, CO. 2014.
- "The analysis revolution: The shift from data generation to data interpretation" Graduate Program in Pharmacology Student Symposium. University of Colorado Anschutz Medical Campus, Aurora, CO. 2014.
- "Transcriptional Regulatory Associations with Pathways: Setting a TRAP to identify drug-gene targets" Computational Bioscience Program. University of Colorado Anschutz Medical Campus, Aurora, CO. 2014.

- "Predicting, targeting, and validating a drug combination therapy for melanoma" for the Mini-symposium on The Power of Informatics to Advance Health. University of Colorado Anschutz Medical Campus, Aurora, CO. 2014.

National

- "Systems approaches to predict and study therapeutic response in cancer." *Luddy School of Informatics and Computing Center for Bioinformatics Research Talk.* Bloomington, IN. March 7, 2024.
- "NPEPPS is a regulator of cisplatin response via volume regulated anion channels." *CSBC/PSON annual meeting*. Bethesda, MA 2023.
- "Open Collaborative Competitions: Insights from DREAM Challenges" Panel Discussion. CureSearch, PEDS Pediatric Early Development Symposium, Virtual. 2022
- "Systems biology approaches predict therapeutic response and investigate experiments in context" *Department of Biomedical Engineering. Oregon Health Sciences University*. Portland, OR. 2019
- "A systems biology approach to study aggressive subtypes in prostate cancer" (Keynote) *Rocky Bioinformatics Conference*. Snowmass, CO 2017.
- "The Prostate Cancer DREAM Challenge: Community efforts to mine open clinical trial data" *Project Data Sphere Symposium V*. Rockville, MD 2017.
- "Network-based models: from predicting protein function in Drosophila to identifying drug targets in cancer" *Laboratory of Cellular and Developmental Biology.* NIDDK/NIH. Bethesda, MD 2016.
- "Urothelial cancer cell line models of tumor biology and drug response" *ISMB*. Orlando, FL 2016.
- "Introduction to the DREAM Prostate Cancer Challenge" *Recomb/ISCB Conference on Regulatory & Systems Genomics with DREAM Challenges*. Philadelphia, PA 2015.
- "Characterizing bladder cancer cell lines as models of solid tumor biology" *Rocky Mountain Bioinformatics Conference*. Aspen, CO. 2014.
- "Predicting survival for diverse patient cohorts using large-scale cancer genomics data" *Rocky Mountain Bioinformatics Conference*. Aspen, CO. 2014.
- "Integrative Genomics Approaches for Predicting Drug Synergies" *Rocky Mountain Bioinformatics Conference*. Aspen, CO. 2014.
- "A community effort to assess drug sensitivity prediction algorithms identifies approaches for improved performance" *ISMB 2014 Highlights Track*. Boston, MA. 2014.
- "Translating genomics data into actionable models to discover novel therapeutics" *University of Illinois*. Champaign, IL. 2013.
- "Translating genomics data into actionable models to discover novel therapeutics" *Worcester Polytechnic Institute*. Worcester, MA. 2013.
- "Translating genomics data into actionable models to discover novel therapeutics" *University of Colorado School of Medicine, Department of Pharmacology*. Denver, CO. 2012.
- "Wisdom of crowds for constructing gene networks and predicting drug sensitivities" *The 10th Annual Rocky Mountain Bioinformatics Conference*. **Keynote Speaker**. Snowmass Village, CO. 2012.
- "NCI-DREAM drug sensitivity challenge: evaluation and results" *The DREAM Conference.* San Francisco, CA. 2012.
- "DREAM5 network inference challenge: The wisdom of crowds" *NCI-DREAM Summit.* Bethesda, MD. 2012.
- "Wisdom of crowds for gene network inference" *International Conference on Systems Biology of Human Disease.* Boston, MA. 2011.
- "Identifying key gene regulatory relationships underlying mechanical induction of ECM scaffold during tooth organ development" *SysCode Retreat.* Waltham, MA. 2011.
- "Alternative splicing in the Immunological Genome Project" *The Immunological Genome Retreat.* Boston, MA. 2011.
- "Network Biology approaches to discover drug synergies" *Vertex Pharmaceuticals.* Cambridge, MA. 2011
- "Experimental assessment of DREAM5 network inference predictions" *The DREAM conference.* New York, NY. 2010.
- "Data integration and gene function prediction in Drosophila melanogaster" *Boston University.* Boston, MA. 2009.
- "Data integration and gene function prediction in Drosophila melanogaster" *The Jackson Laboratory.* Bar Harbor, ME. 2009.
- "Data integration and gene function prediction in Drosophila melanogaster" *Broad Institute.* Boston, MA. 2009.

International

- "A Pathway-Level Information ExtractoR (PLIER) framework to gain mechanistic insights in obesity in Down syndrome" Pacific Symposium for Biocomputing. Hawaii. 2025
- "A novel mechanism of chemotherapy resistance by the regulation of volume regulated anion channels" JNI Oncology Lecture. Rotterdam, Netherlands. 2024
- "Studying and targeting aggressive molecular subtypes in prostate cancer" Department of Urology lecture series. Rotterdam, Netherlands. 2024
- "A Pathway-Level Information ExtractoR (PLIER) framework to gain mechanistic insights in obesity in Down syndrome" Turku Applied Mathematics and Statistics Seminar. Turku, Finland. 2024
- "A novel mechanism of chemotherapy resistance by the regulation of volume regulated anion channels" Frontiers in Science seminar series. Turku, Finland. 2024
- "A novel mechanism of chemotherapy resistance by the regulation of volume regulated anion channels" University of Helsinki life sciences (HiLIFE) seminar series. Helsinki, Finland. 2024
- "Predicting therapeutic sensitivity and resistance" *AACR Educational Session*, *Systems Biology Approaches in Cancer.* Atlanta, GA, USA. 2019
- "DREAM Challenges" *Intelligent Systems for Molecular Biology*. Chicago, IL, USA. 2018
- "GSEA-InContext: Identifying novel and common patterns in expression experiments" *Intelligent Systems for Molecular Biology*. Chicago, IL, USA. 2018
- "Addressing biomedical research challenges: the community and the individual" Polish Bioinformatics Society. Białystok, Poland. 2016.

TEACHING AND MENTORING RECORD

Courses designed and taught

Spring 2016, 2018 – CPBS7630 – Instructor, Computational Methods for Addressing Big Data Challenge in Biomedicine

Spring 2023, Summer 2024 – PHCL7650 – Research in Informatics

Lectures

Spring 2014-2024 – **CPBS7712** – Taught 2 lectures on cancer informatics and systems pharmacology
Spring 2017-2026 – CANB7600 – Taught 1-2 lectures as a Bioinformatics workshop.
Spring 2015-2026 – PHCL7620 – Taught 2 lectures on next-gen drug target identification
2014-2020 – Pharmacology journal club
2014-2021 – Biomedical Sciences journal club
Fall 2014-2025 – PHCL7600 – Taught 1 lecture on genomic analysis in pharmacology
Fall 2014-2022 – **CPBS7711** – Taught 2 lectures on genomic analysis
Fall 2015, 2016 – PHCL7605 – Led group discussions on ethics in research
Fall 2015 – BIOS6660 – Taught 2 lectures on predicting drug sensitivity
Fall 2016 – BSBT6111 – Taught 1 lecture on open-data and open-science

Mentoring

Graduate Students

Andrew Goodspeed – Pharmacology – graduated 10/18

- 3 first-authored plus 4 co-authored manuscripts
- Front Range Cancer Challenge Fellow
- T32 PharMM training grant
- Current Position: Assistant Research Professor and Manager of the UCCC Bioinformatics Core

Rani Powers – Computational Biosciences – graduated 8/19

- 3 first-authored plus 4 co-authored manuscripts
- Blumenthal Down syndrome Predoctoral Fellow
- NSF GRFP honorable mention
- T15 CPBS training grant
- Ian Lawson Van Toch Memorial Award for Outstanding Student Paper – ISMB 2018
- Dissertation award winner from the Graduate School
- Senior Staff Scientist at the Wyss Institute
- Current Position: Founder and CEO of Pluto Biosciences

Christiaan De Jong – MD, PhD – graduated 8/24

- 8 first-authored plus 5 co-authored manuscripts

- Co-mentored with Dr. Tahlita Zuiverloon at Erasmus MC, The Netherlands
- Second Prize for the Best Abstract by a Resident at EAU22
- EAU Best Paper on Fundamental Research Award 2024
- Current Position: Resident

Lucas Gillenwater – Computational Biosciences – graduated 6/25
- 2 first-authored plus 3 co-authored manuscripts
- Blumenthal Down syndrome Predoctoral Fellow
- T32 PharMM training grant
- Current Position: Postdoc with Casey Greene

Lily Elizabeth Feldman – Pharmacology – graduated 8/25
- 2 first-authored plus 4 co-authored manuscripts
- T32 PharMM training grant
- Chair, Gordon Research Seminar, Efflux Pumps
- CU Innovations Fellow
- Department of Pharmacology Student Research Award 2025
- Current Position: 20% Postdoc with Jim Costello, 80% CU Innovations HIE Lead

Michael Orman – Pharmacology – graduated 9/25
- 2 first-authored plus 4 co-authored manuscripts
- Current Position: Postdoc with Eric Pietras

Cailin Deiter – Pharmacology – current
- 5 co-authored manuscripts
- T32 PharMM training grant
- NIH Diversity Supplement

Ralf Dagdag (Co-mentored with Chris Gignoux) – Pharmacology – current
- T32 PharMM training grant

Natalie Zacjenko – Cancer Biology – current
- T32 CANB training grant

Kyle Sullivan – Cancer Biology – current

Thesis Committee
D. Suzi Bryan – Molecular Biology
Kyle Smith – Computational Biosciences (chair)
Katie Mishall – Cancer Biology
Patrick Cherry – Molecular Biology
Michael Oliphant – Reproductive Science
Jessica Hsu – Pharmacology (chair)
Callie Federer – Computational Biosciences (chair)
Cody Glickman – Computational Biosciences
Johannes Menzel – Molecular Biology
Nan Chen – Pharmacology (chair)
Mayla Boguslav – Computational Biosciences (chair)
Harrison Pielke-Lombardo – Computational Biosciences (chair)
Laura Stevens – Computational Biosciences (chair)
Connor Hughes – Pharmacology (chair)
Lauren Jillson – Cancer Biology
Connor Purdy – Cancer Biology
Logan Tyler – Pharmacology
Phil Tatman – Pharmacology
Ian Shelton – Pharmacology (chair)
Spencer Hall – Pharmacology
Madison Rodriguez - Pharmacology
Bryan Johnson – Molecular Biology
Emilia Smith – Pharmacology (chair)

Scott Lin – Cancer Biology
Lorena Alamillo – Pharmacology
Jared Williams – Cancer Biology (chair)
Patrick Pence – Pharmacology (chair)
Alexandra Becks – Cancer Biology
Parker Hicks – Human Molecular Genetics and Genomics
Rianna Farahani – Pharmacology (chair)
Grace Akatsu – Pharmacology (chair)

Postdoctoral Researcher
Sutanu Nandi - current
Gabriel Yette (Co-mentor with Dr. Cramer) – Research Scientist, Genomics Shared Resource
Teemu (Daniel) Laajala – Faculty at the University of Turku
Brian Ross – Independent Consultant
Kim Kanigel-Winner – Data Analyst with Rancho Bioscience, San Diego, CA
Somsak Phattarasukol – returned to Thailand

Rotation Students
Andrew Goodspeed – Pharmacology
Rani Powers – Computational Bioscience
Jessica Hsu – Pharmacology
Gregory Wright – Biomedical Sciences Program
Callie Federer – Computational Bioscience
Sean Korpela – Pharmacology
Robert Jones – Medical Science Training Program
Mayla Boguslav – Computational Bioscience
Harrison Pielke-Lombardo – Computational Biosciences
Justin Roberts – Biomedical Sciences Program
Brent Carrillo – Pharmaceutical Sciences
Michael Orman – Pharmaceutical Sciences
Lily Feldman – Biomedical Sciences Program
Lucas Gillenwater – Computational Biosciences
Michelle Foreman – Biomedical Science Program
Stephanie Araki – Biomedical Science Program
Connor Elkhill – Computational Biosciences
Nathaniel Xander – Pharmacology
Cailin Deiter – Biomedical Science Program
Ralf Dagdag – Biomedical Science Program
Scott Lin - MSTP
Jordan Swartz – Pharmacology
Weishan Li – Computational Biosciences
Lauren Wimer - Biomedical Science Program
Natalie Zajczenko – Cancer Biology
Kyle Sullivan – Cancer Biology
Ward Kirschbaum – MSTP

Summer Interns
Sammy Bergman – Colorado College (Boettcher Collaboration Grant) 2026
Aariv Arora – Stargate School 2026
Aarush Shah – Cherry Creek High School 2026
Madianna Finley-James – Regis University 2025
Christian De Jong – Erasmus Medical Center - 2019
Anthony Sun – CRSF Fellow - 2019
Holly Weeks – MPH student at University of Colorado Anschutz Medical Campus – 2016-17
Alex Singh – Lakewood High School – 2016 – attended Carnegie Mellon University
William Duncan Palmer – Computational Biosciences Summer Student – 2015 – Next position at Sage Bionetworks
Becca Marion – Master's Biostatistics Student, Université catholique de Louvain – 2015 – next position, PhD student
Amay Srivastava – Rock Canyon High School – 2015

UTRAC student interns
Hunter Carrol – 2022-23

GRANT SUPPORT

Pending

BC260461P1 **– DoD (Richer)**
01/2026 – 12/2028
Targeting the Thyroid Hormone/Androgen Receptor Axis to Block Metastatic Progression of ER+ Breast Cancer in Women on Thyroid Hormone Replacement Therapy
Role: Co-I, $1.25M total ($65,000 to Costello)

OC260237 – **DoD (Costello, Bitler)**
01/2027 – 12/2029
Improving Patient Outcomes to Platinum Drug Treatment by Targeting the Volume-Regulated Anion Channel
Role: Contact PI, $1.4M total

Active

R13 CA317787 – NIH/NCI (Costello)
07/2026 – 06/2027
Systems Approaches to Cancer Biology Meeting
Role: PI, $25,000

ASPIRE (Costello, Bitler, Theodorescu, Qiu, Bankston, Kuhns)
07/2026 – 06/2028
NPEPPS Dual Roles in Cancer Therapy: Immunotherapy and Chemotherapy Resistance Mechanisms
Role: MPI (Contact PI), $200,000

T32 GM158468 – NIH/NIGMS (Costello, Dell'Acqua, Aoto)
07/2025 – 06/2030
Predoctoral Training Grant in Pharmacology and Molecular Medicine
Role: MPI (Contact PI), $380,000

R01 HD109765 – NIH/NICHD (Costello, Greene)
07/2022 – 06/2027
Novel strategies to deconvolute co-occurring conditions in Down syndrome
Role: MPI (Contact PI), $2.5M direct ($1.25M to Costello)

R01 CA268055 – NIH/NCI (Costello, Theodorescu)
08/2022 – 07/2027
NPEPPS is a novel and druggable determinant of chemotherapy resistance in bladder cancer
Role: MPI, $2M direct ($1M to Costello)

5 P30 CA046934 – NIH/NCI (Schulick)
04/1997 – 01/2027
University of Colorado Cancer Center Support Grant
Role: Director of Bioinformatics Shared Resource, (35% salary support)

25B5340 – Breast Cancer Research Foundation (Borges)
Improving Outcomes for All Women with Postpartum Breast Cancer
10/01/2024 – 09/30/2025
Role: Co-I (5% FTE)

R25 HD114950 – NIH/NICHD (Espinosa)
Data Science for Developing Scholars in Down Syndrome Research (DS3)
07/2024-6/2029
Role: Co-I (3% FTE)

U24 CA274494 – NIH/NCI (Varma, Banerjee)
Multi-Consortia Coordinating Center (MC2 Center) for Cancer Biology: Building Interdisciplinary Scientific Communities, Coordinating Impactful Resource Sharing, and Advancing Cancer Research
01/2022-12/2027
Role: Co-I (3% FTE)

Completed

R01 CA262279 – NIH/NCI (Cramer)
Androgen Signaling in CaP with loss of MAP3K7 and CHD1
07/2021-6/2026
Role: Co-I (3% FTE)

U01 CA231978 – NIH/NCI (Costello, Cramer)
09/2019 – 08/2025
Systems analysis of aggressive prostate cancer pathology
Role: MPI (Contact PI), $2.5M direct ($1.25M to Costello)

Cancer League of Colorado – Research Grant (Costello)
07/2024-12/2025
Assessing the phenotypic effects of innervation in bladder cancer
Role: PI, $30,000 direct

Cancer League of Colorado – Research Grant AWD-230627-MJ (Joshi, Costello, Cramer)
01/2023-12/2024
Vitamin D synthetic lethal network across benign and metastatic cells
Role: MPI, $60,000 direct

CSU-CU Companion Animals in Cancer Research pilot award – (Duval, Costello)
03/2022 – 03/2025
Identifying biological dependencies in canine osteosarcoma using whole genome CRISPR-Cas9 libraries
Role: MPI, 50k direct

U2C HL156291 – NIH/NHLBI (Espinosa, Resnick, Carroll, DiGiovanna, Ferretti, Guinney, Haendel)
09/2020 – 08/2025
Data management and portal for the INCLUDE (DAPI) project
Role: Co-I, $12.5M direct ($130k to Costello)

R01 AI150305-01 – NIH/NIAID (Espinosa)
09/2019 – 03/2024
Understanding Down syndrome as an interferonopathy
Role: Collaborator, $14M direct ($100k to Costello)

R13 CA291000 – NIH/NCI (Costello)
07/2024 – 06/2025
Systems Approaches to Cancer Biology Meeting
Role: PI, $25,000

R13 CA271712 – NIH/NCI (Costello)
04/2022 – 03/2023
Systems Approaches to Cancer Biology Meeting
Role: PI, $25K direct

R21 CA242747 – NIH/NCI (Tyekucheva, Costello)
03/2020 – 02/2023
Curated prostate cancer data for novel and reproducible prognostic modeling
Role: MPI, 250k direct ($40k to Costello)

AWD G-40093-01, Anschutz Foundation (Costello, Duval)

07/2017 – 07/2022
Transforming the cancer drug development paradigm by integrating precision medicine in companion animals with naturally occurring cancers.
Role: MPI, $375k direct

CO-C-29-098 Colorado CTSA (UL1TR002535) (Duval, Costello)
07/2020-06/2022
Development of a comparative oncology functional genomics screen platform using a CRISPR-Cas9 library to identify critical dependencies and mechanisms of treatment resistance in canine cancers.
Role: MPI

1 R01 CA199741-01 – NIH/NCI (Cramer, Lucia)
07/2015 – 07/2020
Coordinate loss of CHD1 and MAP3K7 with other CNAs in prostate cancer aggressiveness
Role: Co-I, $1.5M direct ($145k to Costello)

2 R01 GM099705-05 – NIH/NIGMS (Cech)
04/2016 – 04/2021
TERT Promoter Mutations and Telomerase Reactivation in Cancer Cells
Role: Collaborator, $750k direct ($90k to Costello)

Bristol-Meyers Squibb research grant (Bridges)
09/2019 – 08/2020
RA-DREAM Challenge: Automated Scoring of Radiographic Damage in Rheumatoid Arthritis
Role: Challenge Director, $200k direct ($17k to Costello)

Cancer League of Colorado (Costello, Cramer)
07/2018 – 07/2019
Targeting the Achilles heel of prostate cancer with loss of CHD1 and MAP3K7
Role: MPI, $60k direct

AWD-173685, Cancer League of Colorado (Costello)
07/2017 – 12/2018
Measuring chromosome-conformation abnormalities within a single cancer cell
Role: PI, $30k direct

AWD-152792, Boettcher Foundation Webb-Waring Research Award (Costello)
07/2015 – 07/2018
Defining and targeting bladder cancer subtypes through pan-cancer pharmacogenomic profiling
Role: PI, $225k direct

Colorado Advanced Industry Accelerator Program (Costello)
06/2016 – 07/2017
PrecisionProfileDx: A genomics workbench solution to accelerate insights for cancer treatment
Role: PI, $142k direct

AWD-153400, Cancer League of Colorado (Costello)
07/2015 – 07/2016
Integrating transcriptional regulatory and metabolic networks to characterize bladder cancer cellular response to chemotherapies
Role: PI, $30k direct

2014 Pilot Grant, Denver Chapter of Golfers Against Cancer (Costello, Theodorescu)
09/2014 – 09/2016
Identifying predictive markers of bladder cancer patient response to chemotherapeutics
Role: Co-PI, $50k direct

Meyn Foundation Prostate Cancer Program (Cramer, Costello, Lucia)
04/2014 – 04/2016
Identification of Driver Pathways in Prostate Cancer-Associated Fibroblasts
Role: Co-PI, $50k direct

IRG 57-001-53, American Cancer Society – Institutional Resource Grant
01/2015 – 01/2016
Co-deletion of MAP3K7 and CHD1 as drivers in bladder cancer
Role: PI, $30k direct

Student Fellowships
Cailin Deiter – T32 Pharmacology Training Grant
Lily Elizabeth Feldman – T32 Pharmacology Training Grant
Lucas Gillewater - T32 Pharmacology Training Grant (INCLUDE Supplement), Linda Crnic Institute, Blumenthal Down Syndrome Predoctoral Fellowship ($40,000).
Andrew Goodspeed – T32 Pharmacology Training Grant; Front Range Cancer Challenge ($50,000)
Rani Powers – NSF GRFP (Honorable mention); Linda Crnic Institute, Blumenthal Down Syndrome Predoctoral Fellowship ($40,000). Best Dissertation Award 2020.

PUBLICATIONS (H-INDEX = 48; I-10-INDEX = 84)

Google Scholar:
https://scholar.google.com/citations?user=zLSCHnkAAAAJ&hl=en
Colorado Profiles:
https://profiles.ucdenver.edu/display/3663664
Complete List of published works in MyBibliography
http://www.ncbi.nlm.nih.gov/myncbi/browse/collection/47290117/?sort=date&direction=descending

Note that the underlined names are members of the Costello lab or members of the BBSR that Dr. Costello directs.

Preprints

1. Tusharkanti Ghosh, Lucas A Gillenwater, Casey S Greene, James C Costello. HetNetEX: Exact Asymptotic Inference in Heterogeneous Biomedical Knowledge Graphs. ***bioRxiv.*** 2026.07.05.736581
2. Cailin S Deiter, Christiaan de Jong, Mitchell Olislagers, Kimberly R Jordan, Tahlita CM Zuiverloon, James C Costello. Stromal innervation is prognostic in non-muscle-invasive bladder cancer and predicted by a distinct microenvironmental transcriptomic signature. ***bioRxiv.*** 2026.09.21.751588
3. Farbod Khoraminia, Mitchell Olislagers, Florus Christiaan de Jong, Farhan Akram, Alberto Nakauma Gonzalez, Danique Lichtenberg, Andrew Stubbs, **James C Costello**, Lucia Rijstenberg, Geert JLH van Leenders, Alina Vrieling, Katja KH Aben, Lambertus ALM Kiemeney, Robert F Hoedemaeker, Chris H Bangma, Sita Vermeulen, Geert Litjens, Nadieh Khalili, Tahlita CM Zuiverloon. Predicting bladder cancer molecular subtypes linked to Bacillus Calmette-Guerin response for histology images using deep learning. ***medRxiv*** 2026.05.05.26352375
4. Boopathi Subramaniyan, Bipul R Acharya, Prince Anand, Saravana Kumar Kailasam Mani, Saswat Mohapatra, Xingyu Chen, Fangyuan Qu, Yesai Fstkchyan, Corazon Gutierrez, Hany Abdel-Hafiz, **James C Costello**, and Dan Theodorescu. Loss of the Y chromosome in bladder cancer drives metabolic reprogramming. ***bioRxiv*** 2025.08.26.672471
5. Marisa G. Stahl, Jessica R. Shaw, Neetha P. Eduthan, Angela L. Rachubinski, Keith P. Smith, Belinda E. Estrada, Matthew D. Galbraith, Ronald J. Sokol, Sameer Chavan, Laura A. Leaton, Katherine M. Kichula, Lucas A. Gillenwater, **James C. Costello**, Paul J. Norman, Jill M. Norris, Edwin Liu, Joaquin M. Espinosa. Multi-Omics Assessment of Genetic Risk for Celiac Disease in Down Syndrome. ***medRxiv*** 2022.09.27.22280436

Submitted (in review)
1. Lily Elizabeth Feldman, William G Nichols, Emily Teichman, Colin H Peters, Hanna R Ferris, Natali I Zajczenko, Fabrice Dabertrand, John Bankston, Catherine Proenza, **James C Costello**. NPEPPS protein suppresses Volume Regulated Anion Channel chloride transport during osmotic stress in ovarian cancer cells. ***Journal of General Physiology.***

Refereed (Invited articles are noted)

2026

1. Sutanu Nandi, Zenitha Sundararajan, Marc Subirana-Granes, Joaquin M Espinosa, Milton Pividori, Kelly D Sullivan, Matthew D Galbraith, and **James C Costello**. An AI-Powered Trisomy T21 Research Assistant. ***Scientific Reports*** Accepted.
2. Karen LF Alvarez-Eraso, María J Contreras-Zárate, Andrew Goodspeed, **James C Costello**, Jenny A Jaramillo-Gómez, Stella Koliavas, R Alejandro Marquez-Ortiz, Morgan S Fox, D Ryan Ormond, Peter Kabos, Mercedes Rincon, Diana M Cittelly. Estradiol reprograms microglia to create an immune-suppressed niche permissive to breast cancer brain metastasis. ***Neuro-Oncology*** (Accepted)

2025

3. Stephen C Purdy, Kate Matlin, Christopher Alderman, Amber Baldwin, Natasha Shrivastava, Goksu Sarioglu, Somnath Dutta, Kristofor J Webb, Arthur Wolin, Dillon P Boulton, Annika Gustafson, Jyoti Kapali, John D Landua, Michael T Lewis, M Cecilia Caino, **James C Costello**, William Old, Xiang Wang, Rui Zhao, Heide L Ford, Neelanjan Mukherjee. eIF3d and eIF3e mediate selective translational control of hypoxia that can be inhibited by small molecules. ***Cell Reports.*** 44(12):116643.
4. Gustavo Stolovitzky, Julio Saez-Rodriquez, Julie Bletz, Jacob Albrecht, Gaia Andreoletti, **James C Costello**, Paul Boutros. The life cycle of challenges and benchmarks. ***Journal of Data-centric Machine Learning Research*** (Chapter 1 in an online book, AI competitions and Benchmarks: the science behind the contests)
5. Steven Wiley, Carlos F Lopez, Andrei S Rodin, Russell C Rockne, Thomas E Yankeelov, Herbert M Sauro, Ghmkin Hassan, Sandhya Prabhakaran, Emek Demir, Mengzhou Hu, Juan F Bass, Kimberly A Luddy, Hannah Newman, Jonathan P Mochel, **James C Costello**, Jianhua Xing, Said M Afify, Ahmet Acar, Melanie Hayden Gephart, Song Feng, Orion Banks, Jineta Banerjee, Ashley Clayton, David E Hill, Randy F Sweis, Maxine C Umeh-Garcia, Yapeng Su. A Roadmap for the Future of Systems Biology in Cancer Research. ***Cancer Research.*** 10.1158/0008-5472.CAN-25-0700
6. Michael V Orman, Laura S Graham, Scott D Cramer, **James C Costello**. Systems biology successes and areas for opportunity in prostate cancer. ***Endocrine-Related Cancer.*** ERC-25-0067.
7. Bradley R. Corr, Ashley Haggerty, Stefan M. Gysler, Sarah Taylor, Kian Behbakht, Jill Alldredge, Carolyn Lefkowits, Lindsay W. Brubaker, Catherine Bouts, Lisa Marie Babayan, Lainie P. Martin, **James C Costello**, Benjamin G. Bitler, Junxiao Hu, Saketh R. Guntupalli. A Phase II, randomized, double-blind study of the use of rucaparib vs. placebo maintenance therapy in metastatic and recurrent endometrial cancer. ***Gynecologic Oncology.*** 200:58-67.
8. Shi Chia, Bryan Johnson, Junxiao Hu, Roel Vermeulen, Marc Chadeau-Hyam, Fernando Guntoro, Hugh Montgomery, Meher Preethi Boorgula, Varsha Sreekanth, Andrew Goodspeed, Bennett Davenport, Felipe Pereir, Vadym Zaberezhnyy, Wolfgang Schleicher, Dexiang Gao, Andreia Cadar, Michael Papanicolaou, Afshin Beheshti, Stephen Baylin, **James C Costello**, Jenna Bartley, Thomas Morrison, Julio Aguirre-Ghiso, Mercedes Rincon, James DeGregori. Respiratory viral infection promotes the awakening and outgrowth of dormant metastatic breast cancer cells in lungs. ***Nature.*** https://doi.org/10.1038/s41586-025-09332-0
9. Sheera R Rosenbaum, Conner J Hughes, Kaiah M Fields, Stehphen C Purdy, Annika Gustafson, Arthur Wolin, Drake Hampton, Nicholas Turner, Christopher C Ebmeier, **James C Costello**, Heide L Ford. An EYA3/NFkB/CCL2 signaling axis suppresses cytotoxic NK cells in the pre-metastatic niche to promote triple negative breast cancer metastasis. ***Science Advances*** 11(19):eadt0504.
10. Lucas Gillenwater, Lawrence Hunter, **James C Costello**. GRACKLE: An interpretable matrix factorization approach for biomedical representation learning. ***Proceedings of ISMB (Bioinformatics)***. 41(Issue Supplement_1):i609-i618.
11. Christina Correia, Choong-Yong Ung, Hu Li, **James C Costello**. State-of-the-art hypothesis-driven systems biology and artificial intelligence approaches to decipher disease complexity. ***Frontiers in Pharmacology.*** 16:doi.org/10.3389/fpharm.2025.1593164 (invited commentary).
12. Sutanu Nandi, Yuehua Zhu, Lucas A Gillenwater, Marc Subirana-Granes, Haoyu Zhang, Negar Janani, Casey Greene, Milton Pividori, Maria Chikina, **James C Costello**. A Pathway-Level Information ExtractoR (PLIER) framework to gain mechanistic insights into obesity in Down syndrome. ***Pacific Symposium on Biocomputing*** 30:412-425.

2024

13. Lucas A Gillenwater, Matthew D Galbraith, Angela L Rachubinski, Neetha Paul Eduthan, Kelly D Sullivan,

Joaquin M Espinosa, **James C Costello**. Integrated analysis of immunometabolic interactions in Down syndrome. ***Science Advances*** 10(50):eadq3073.

14. Lily E Feldman, Saswat Mohapatra, Robert T Jones, Mathijs Scholtes, Charlene B Tilton, Michael V Orman, Molishree Joshi, Cailin S Deiter, Travis P Boneske, Fangyuan Qu, Corazon Gutierrez, Huihui Ye, Eric T Clambey, Sarah Parker, Tokameh Mahmoudi, Tahlita Zuiverloon, **James C Costello***, Dan Theodorescu*. Regulation of volume regulated anion channels alters sensitivity to platinum chemotherapy. ***Science Advances*** 10(50):eadr9364. *Co-senior authors.
    - Press: CU Cancer Center
15. Michael V Orman, Varsha Sreekanth, Teemu D Laajala, Scott D Cramer, and **James C Costello**. ProstaMine: A bioinformatics tool for identifying subtype-specific co-alterations associated with aggressiveness in prostate cancer. ***Frontiers in Pharmacology*** 15:1360352.
16. Katja Kiseljak-Vassiliades, Kristin Lipe, Christie G. Turin, Lauren Fishbein, James C Costello, Janice M. Kerr, Tessa B. Holmstoen, Samy Youssef, Kevin O. Lillehei, BK Kleinschmidt-DeMasters, Margaret E. Wierman. E-cadherin Expression and Gene Expression Profiles in Corticotroph Pituitary Neuroendocrine Tumor Subtypes. ***Journal of Neuropathology and Experimental Neurology*** 83(7):586-595.
17. Robert T Jones, Mathijs Scholtes, Andrew Goodspeed, Maryam C Akbarzadeh, Saswat Mohapatra, Lily Elizabeth Feldman, Hedvig Vekony, Annie Jean, Charlene B Tilton, Michael V Orman, Shahla Romal, Cailin Deiter, Tsung Wai Kan, Nathaniel Xander, Stephanie P. Araki, Molishree Joshi, Mahmood Javaid, Eric T Clambey, Ryan Layer, Teemu D. Laajala, Sarah Parker, Tokameh Mahmoudi, Tahlita Zuiverloon, Dan Theodorescu, **James C Costello**. NPEPPS is a druggable driver of platinum resistance. ***Cancer Research*** 84(10):1699-1718.
    - Press: CU Cancer Center
18. Jonathan L. Golob, Tomiko T. Oskotsky, Alice S. Tang, Alennie Roldan, Verena Chung, Connie W.Y. Ha, Ronald J. Wong, Kaitlin J. Flynn, Antonio Parraga-Leo, Camilla Wibrand, Samuel S. Minot, Gaia Andreoletti, Idit Kosti, Julie Bletz, Amber Nelson, Jifan Gao, Zhoujingpeng Wei, Guanhua Chen, Zheng-Zheng Tang, Pierfrancesco Novielli, Donato Romano, Ester Pantaleo, Nicola Amoroso, Alfonso Monaco, Mirco Vacca, Maria De Angelis, Roberto Bellotti, Sabina Tangaro, Abigail Kuntzleman, Isaac Bigcraft, Stephen Techtmann, Daehun Bae, Eunyoung Kim, Jongbum Jeon, Soobok Joe, The Preterm Birth DREAM Community, Kevin R. Theis, Sherrianne Ng, Yun S. Lee Li, Phillip R. Bennett, David A. MacIntyre, Gustavo Stolovitzky, Susan V. Lynch, Jake Albrecht, Nardhy Gomez Lopez, Roberto Romero, David K. Stevenson, Nima Aghaeepour, Adi L. Tarca, **James C. Costello**, Marina Sirota. Microbiome Preterm Birth DREAM Challenge: Crowdsourcing Machine Learning Approaches to Advance Preterm Birth Research. ***Cell Reports Medicine*** 5(1):101350.
    - Press: March of Dimes.
    - Press: University of Michigan

2023

19. Connor J. Hughes, Kaiah M. Fields, Etienne P. Danis, Jessica Y. Hsu, Deepika Neelakantan, Melanie T. Vincent, Annika L. Gustafson, Michael J. Oliphant, Varsha Sreekanth, Vadym Zaberezhnyy, **James C. Costello**, Paul Jedlicka, Heide L. Ford. SIX1 and EWS/FLI1 co-regulate an anti-metastatic gene network in Ewing Sarcoma. ***Nature Communications*** 14:4357.
20. Samantha N. Thomas, Brian F. Niemeyer, Alexander J. Kaiser, Joaquin M. Espinosa, Kelly D. Sullivan, Andrew Goodspeed, **James C. Costello**, Rodrigo Cañas-Arranz, Adolfo García-Sastre, Kambez H. Benam. Down syndrome is associated with altered frequency and functioning of tracheal multiciliated cells, and response to influenza virus infection. ***iScience.*** 26(8):107361.
21. Teemu D Laajala, Varsha Sreekanth, Alex C. Soupir, Jordan H. Creed, Anni S. Halkola, Federico CFG Calboli, Kalaimathy Singarvelu, Michael V. Orman, Christelle Colin-Leitzinger, Travis Gerke, Brooke L Fidley, Svitlana Tyekucheva, **James Costello**. A harmonized resource of integrated prostate cancer clinical, -omic, and signature features. ***Scientific Data*** 10(1):430.
22. Florus C. de Jong, Teemu D. Laajala, Robert F. Hoedemaeker, Kimberley R. Jordan, Sébastien Rinaldetti, Angelique M.A. van der Made, Egbert R. Boevé, Deric K.E. van der Schoot, Bart Nieuwkamer, Emiel A.M. Janssen, Tokameh Mahmoudi, Joost L. Boormans, Dan Theodorescu*, **James C. Costello***, Tahlita C.M. Zuiverloon.* Non-muscle Invasive Bladder Cancer Molecular Subtypes Predict Differential Response to Intravesical Bacillus Calmette-Guérin. ***Science Translational Medicine*** 15(697):abn4118. (*joint senior authors)
    - EAU Best Paper on Fundamental Research Award 2024
    - Press: New Bladder Cancer Classification Predicts Treatment Response.
    - Press: CU Cancer Center Researcher Among Team Investigating Bladder Cancer That Doesn't Respond to Treatment

23. Gabriele Romano, Francesca Paradisco, John P. Miller, Roger J. Liang, Jennifer A. Wargo, Francesca Tarballi, **James C. Costello**, Lawrence Kwong. Microparticle-delivered Cxcl9 delays the relapse of BRAF inhibitor-treated melanoma. ***Cancer Immunology Research*** 23; CIR-22-0224

2022

24. Faye A. Camp, Tonya M. Brunetti, Michelle M. Williams, Jessica L. Christenson, Varsha Sreekanth, **James C. Costello**, Zachary L.Z. Hay, Ross M. Kedl, Jennifer K Richer, Jill E Slansky. Antigens expressed by breast cancer cells undergoing EMT stimulate cytotoxic CD8+ T cell immunity. ***Cancers*** 14(18):4397.
25. Sébastien Rinaldetti, Qiong Zhou, Joshua M. Abbott, Florus C. DeJong, Hector Esquer, **James C. Costello**, Dan Theodorescu, Daniel V. LaBarbera. High-content drug discovery targeting molecular bladder cancer subtypes. ***International Journal of Molecular Sciences*** 23(18):10605.
26. Dongmei Sun, Thanh M. Nguyen, Robert J. Allaway, Jelai Wang, Verena Chung, Thomas V Yu, Michael Mason, Isaac Dimitrovsky, Lars Ericson, Hongyang Li, Yuanfang Guan, Ariel Israel, Alex Olar, Balint Armin Pataki, RA2 DREAM Challenge Community, Gustavo Stolovitzky, Justin Guinney, Percio S. Gulko, Mason B. Frazier**,** Jake Y. Chen*, **James C. Costello***, S. Louis Bridges, Jr.* A Crowdsourcing Approach to Develop Machine Learning Models to Quantify Radiographic Joint Damage in Rheumatoid Arthritis. ***JAMA Open Network*** 5(8):e2227423
27. Alexandra J Lee, Dallas L Mould, Jake Crawford, Dongbo Hu, Rani K Powers, Georgia Doing, **James C Costello**, Deborah A Hogan, Casey S Greene. SOPHIE: Generative neural networks separate common and specific transcriptional responses. ***Genomics, Proteomics, and Bioinformatics.*** 20(5):912-927.
28. Jessica Y Hsu, Stephanie Nance, Jenean O'Brien, Veronica M Wessells, Andrew E Goodspeed, Jared C Talbot, Sharon L Amacher, Paul Jedlicka, Joshua C Black, **James C Costello**, Adam D Durbin, Kristin B Artinger, Heide L Ford. Six1 is a master regulator of the Rhabdomyosarcoma undifferentiated state. ***Cell Reports*** 38(5):110323.
29. Lomeli C Shull, Hyun Min Kim, Ezra S Lencer, Susumu Goyama, Mineo Kurokawa, **James C Costello**, Kenneth Jones, Kristin B Artinger. PRDM proteins control Wnt/B-catenin activity to regulate craniofacial chondrocyte differentiation ***Development*** 149(4):dev200082.

2021

30. R Alejandro Marquez-Ortiz, Maria J Contreras-Zarate, Karen LF Alvarez-Eraso, Vesna Tesic, Gina Kwak, Zachary Littrell, **James C Costello**, Varsha Sreekanth, D Ryan Ormond, Sana D Karam, Peter Kabos, Diana M Cittelly. *IL13TRa2 promotes proliferation and outgrowth of breast cancer brain metastasis.* ***Clinical Cancer Research*** 27(22):6209-6221.
31. Lauren K Jillson, Gabriel A Yette, Teemu D Laajala, Wayne D Tilley, **James C Costello**, Scott D Cramer. Androgen receptor signaling in prostate cancer genomic subtypes. ***Cancers*** 13(13): 3255-3269.
32. Evelyn K Bordeaux, Joseph L Sottnik, Sanjana Mehrotra, Sarah E Ferrara, Andrew E Goodspeed, **James C Costello**, Mathew J Sikora. Mediator of DNA damage checkpoint 1 (MDC1) is a novel estrogen receptor co-regulator in invasive lobular carcinoma of the breast. ***Molecular Cancer Research*** 10.1158/1541-7789.MCR-21-0025
33. Lauren K Jillson, Leah C Rider, Lindsey U Rodrigues, Lina Romero, Anis Karimpour-Fard, Cera Nieto, Claire Gillette, Kathleen Torkko, Etienne Danis, Elizabeth E Smith, Rosalie Nolley, Donna M Peehl, M Scott Lucia, **James C Costello**, Scott D Cramer. MAP3K7 loss drives enhanced androgen signaling and independently confers risk of recurrence in prostate cancer with joint loss of CHD1. ***Molecular Cancer Research*** 10.1158/1541-7786.MCR-20-0913.
    a. Press in Reuters
    b. Press in the Colorado Cancer Blog
34. Adi L Tarca, Balint Armin Pataki, Roberto Romero, Marina Sirota, Yuanfang Guan, Rintu Kuntum, Nardhy Gomez-Lopez, Bogdan Done, Gaurav Bhatti, Thomas Yu, Gaia Andrioletti, Tinnakorn Chaiworapongsa, The DREAM Preterm Birth Prediction Challenge Consortium, Sonia S Hassan, Caur-Dong Hsu, Nima Aghaeepour, Gustavo Stolovitzky, Istvan Csabai, **James C Costello.** Crowdsourcing assessment of maternal blood multi-omics for predicting gestational age and preterm birth ***Cell Reports Medicine*** 2(6): 100323.
    c. Press release from Wayne State University
35. Adam Mueller, Miles Piper, Andrew Goodspeed, Shiv Bhuvane, Jason Williams, Shilpa Bhatia, Andy Phan, Benjamin Van Court, Kathryn Zolman, Brisa Peña, Ayman Oweida, Sara Zakem, Cheryl Meguid, Michael Knitz, Laurel Darragh, Thomas Bickett, Jacob Gadwa, Luisa Mestroni, Matthew Taylor, Kimberly Jordan, Peter Dempsey, M. Lucia, Martin McCarter, Marco Del Chiaro, Wells Messersmith, Richard

Schulick, Karyn Goodman, Michael Gough, Casey Greene, **James C Costello**, Antonio Galvao Neto, David Lagares, Kirk Hansen, Adrie van Bokhoven, and Sana Karam. Induction of ADAM10 by RT drives fibrosis, resistance, and EMT in pancreatic cancer. ***Cancer Research*** canres.CAN-20-3892-A.2020.

2020

36. Molishree Joshi, Jihye Kim, Angelo D'Alessandro, Emily Monk, Kimberley Bruce, Hanan Elajaili, Eva Nozik, Andrew Goodspeed, **James C Costello**, Isabel Schlaepfer. CPT1A Over-expression increases reactive oxygen species in the mitochondria and promotes antioxidant defenses in prostate cancer. ***Cancers.*** 12(11): 3431.
37. Megan M Tu, Hany A Abdel-Hafiz, Robert T Jones, Annie Jean, Katelyn J Hoff, Jason E Duex, Ana Chauca-Diaz, **James C Costello**, Garrett M Dancik, Beth A Jirón Tamburini, Bogdan Czerniak, Jonathan Kaye, and Dan Theodorescu. Inhibition of CCL2 receptor, CCR2, enhances tumor response to 2 immune checkpoint therapies. ***Communications Biology.*** 3(1):720.
38. Casey Greene, **James C Costello**. Biologically informed neural network predicts drug responses. ***Cancer Cell***. 38(5):613-615.
39. Tyler S McCann, Janet K Parrish, Joseph Hsieh, Marybeth Sechler, Lays M Sobral, Chelsea Self, Kenneth L Jones, Andrew Goodspeed, **James C Costello**, Paul Jedlicka. KDM5A and PHF2 positively control expression of pro-metastatic genes repressed by EWS/Flit1, and promote growth and metastatic properties in Ewing sarcoma. ***Oncotarget.*** 11(43):3818.
40. Kimberly Jordan, Matthew J Sikora, Jill E Slansky, Angela Minic, Jennifer K Richer, Marisa R Moroney, Junxiao Hu, Rebecca J Wolsky, Zachary L Watson, Tomomi M Yamamoto, **James C Costello**, Aaron Clauset, Kian Behbakht, T Rajendra Kuma, Benjamin G Bitler. The capacity of the ovarian cancer tumor microenvironment to integrate inflammation signaling conveys a shorter disease-free interval. ***Clinical Cancer Research*** 10.1158/1078-0432.CCR-20-1762.
41. Josh L Stern, Hibshman G, Hu K, Sarah E Ferrara, **James C Costello**, Kim W, Pablo Tamayo, Thomas R Cech, Franklin F Huang. Mesenchymal and MAPK Expression Signatures Associate with Telomerase Promoter Mutations in Multiple Cancers. ***Molecular Cancer Research*** 10.1158/1541-7786.MCR-19-1244.
42. ImmGen at 15. ***Nature Immunology*** 10.1038/s41590-020-0687-4.
43. Hengbo Zhou, Blevins MA, Hsu JY, Kong D, Galbraith MD, Goodspeed A, Culp-Hill R, Oliphant MUJ, Ramirez D, Zhang L, Trinidad-Pineiro J, Mathews Griner L, King R, Barnaeva E, Hu X, Southall NT, Ferrer M, Gustafson DL, Regan DP, D'Alessandro A, **James C Costello**, Patnaik S, Marugan J, Zhao R, Heide L Ford. Identification of a Small-Molecule Inhibitor That Disrupts the SIX1/EYA2 Complex, EMT, and Metastasis. ***Cancer Research*** 10.1158/0008-5472.CAN-20-0435.
44. Lays M Sobral, Hannah M Hicks, Janet K Parrish, Tyler S McCann, Joseph Hsieh, Andrew Goodspeed, **James C Costello**, Joshua C Black, Paul Jedlicka. KDM3A/Ets1 epigenetic axis contributes to PAX3/FOXO1-driven and independent disease-pormoting gene expression in fusion-positive Rhabdomyosarcoma. ***Molecular Oncology*** 14(10):2471-2486.
45. Shanshan Pei, Daniel A Pollyea, Annika Gustafson, Brett M Stevens, Mohammad Minhajuddin, Rui Fu, Kent A Riemondy, Austin E Gillen, Ryan M Sheridan, Jihye Kim, **James C Costello**, Maria L Amaya, Anagha Inguva, Amanda Winters, Haobin Ye, Anna Krug, Courtney L Jones, Biniam Adane, Nabilah Khan, Jessica Ponder, Jeffrey Schowinsky, Diana Abbott, Andrew Hammes, Jason R Myers, John M Ashton, Travis Nemkov, Angelo D'Alessandro, Jonathan A Gutman, Haley E Ramsey, Michael R Savona, Clayton A Smith, Craig T Jordan. Monocytic subclones confer resistance to Venetoclax-based therapy in acute myeloid leukemia patients. ***Cancer Discovery*** 10:536-51.

2019

46. Rani K Powers, Rachel Culp-Hill, Michael Ludwig, Keith Smith, Kate Waugh, Ross Minter, Katie Tuttle, Angela Rachubinski, Ross Granrath, Rebecca Burgoyne, Angelo D'Alessandro, **James C Costello**, Kelly D Sullivan*, Joaquin M Espinosa*. Trisomy 21 disrupts tryptophan catabolism toward production of neurotoxic metabolites via the interferon-inducible kynurenine pathway. ***Nature Communications*** 10:4766.
47. Satoshi Washino, Leah C Rider, Lina Romero, Lauren Jillson, **James C Costello***, Scott D Cramer*. Loss of MAP3K7 sensitizes prostate cells to Dinaciclib and DNA damaging agents through disruption of homologous recombination. ***Molecular Cancer Research***. doi:10.1158/1541-7786.MCR-18-1335 (*equal contribution)
    a. Press from Colorado Cancer Blog
48. Teemu D Laajala, Travis Gerke, Svitlana Tyekucheva, **James C Costello**. Modeling genetic

heterogeneity of drug response and resistance in cancer. ***Current Opinions in Systems Biology***. 17: 8-14. (invited article)

49. Andrew Goodspeed, Annie Jean**, James C Costello**. A whole-genome CRISPR screen identifies a role of MSH2 in cisplatin-mediated cell death in muscle-invasive bladder cancer. ***European Urology*** 75(2):242-250.
    b. Press in the Oncology Learning Network
    c. Commentary in European Urology
50. Michael UJ Oliphant, Melanie Y Vincent, Matthew Galbraith, Ahwan Pandey, Vadim Zaberezhnyy, Pratyaydipta Rudra, K R Johnson, **James C Costello**, Debashis Ghosh, James V DeGregori, Joaquin M Espinosa, Heide L Ford. Six2 mediates late-stage metastasis via direct regulation of Sox2 and induction of a cancer stem cell program. ***Cancer Research***. 79(4):720-734.
51. Megan M Tu, Francis YF Lee, Robert T Jones, Abigail K Kimball, Elizabeth Saravia, Robert F Graziano, Brianne Coleman, Krista Menard, Jun Yan, Erin Michaud, Han Chang, Hany Abdel-Hafiz, Andrii Rozhok, Jason E Duex, Neeraj Agarwal, Ana Chauca-Diaz, Linda K Johnson, Terry L Ng, John C Cambier, Eric T Clambey, **James C Costello**, Alan J Korman, Dan Theodorescu. Targeting DDR2 enhances tumor response to anti-PD1 immunotherapy. ***Science Advances***. 5(2):eaav2437.
52. Brian C Ross, Fabio Anaclerio, Nicola Lorusso, Mario Ventura, **James C Costello**. Measuring chromosome conformation by fluorescence microscopy. ***bioRxiv*** 10.1101/798512 (October 16, 2019).
53. Brian C Ross, **James C Costello.** Improved inference of chromosome conformation from images of labeled loci. ***F1000Resaerch*** 7(ISCB Comm J):1521 (doi: 10.12688/f1000research.16252.1)
54. Rani K Powers, Anthony Sun, **James C Costello**. GSEA-InContext Explorer: An interactive visualization too for putting gene set enrichment analysis results into biological context. ***bioRxiv*** 10.1101/659847 (June 4, 2019).

2018

55. Michael Morgan, Brent Fitzwalter, Rani K Powers, Charles R Owens, Graciela Gamez, **James C Costello**, Dan Theodorescu, and Andrew Thorburn. (2018) Selection for metastasis leads to increased sensitivity to lysosomal inhibitors. ***Proceedings of the National Academy of Sciences*** 115(36):E8479-E8488.
56. Brian C Ross, Mayla Boguslav, Holly Weeks, **James C Costello** (2018) Modeling heterogeneous populations using Boolean networks. ***BMC Systems Biology*** 12(1):64.
57. Andrew Goodspeed, Annie Jean, Dan Theodorescu, **James C Costello**. (2018) A gene expression signature predicts bladder cancer cell line sensitive to EGFR inhibition. ***Bladder Cancer*** 4(3):269-282.
58. Diogo M Camacho, Katherine M Collins, Rani K Powers, **James C Costello***, James Collins*. (2018) Next-generation machine learning for biological networks ***Cell*** 173:1581-92. (*Co-senior author)
    d. Auffray C and De Meulder B: F1000Prime Recommendation of [Camacho DM et al., Cell 2018 173(7):1581-1592]. In F1000Prime, 16 Sep 2019; 10.3410/f.733392063.793564997
59. Tahlita Zuiverloon, Florus C. de Jong, **James C Costello,** Dan Theodorescu. (2018) Systematic Review: Characteristics and preclinical uses of bladder cancer cell lines**.** ***Bladder Cancer*** 4(2):169-183.
60. Rani Powers, Harrison Pielke-Lombardo, Andrew Goodspeed, Aik-Choon Tan, **James C Costello** (2018) GSEA-InContext: Identifying novel and common patterns in expression experiments. ***Bioinformatics*** 34(13):i555-64.
    e. Proceedings paper at the 2018 ISMB conference
    f. Winner of the Ian Lawson Von Toch Memorial Award for Outstanding Student Paper
    g. Colorado Cancer Blog post about Rani Powers
61. Rebecca L Vartuli, Hengbo Zhou, Lingdi Zhang, Rani K Powers, Jared Klarquist, Pratyaydipta Rudra, Melanie Y Vincent, Debashis Ghosh, **James C Costello** , Ross M Kedl, Jill E Slansky, Rui Zhao, Heide L Ford. (2018) Eya3 enhances breast cancer progression via threonine phosphatase mediated upregulation of PD-L1 and resultant immune suppression. ***JCI*** 128(6)2535-2550.

2017

62. Josh Lewis Stern, Richard D. Paucek, Franklin W. Huang, Mohamoud Ghandi, Ronald Nwumeh, **James C Costello**, Thomas R Cech. (2017) Allele-specific DNA methylation and its interplay with epigenetic histone marks at promoter-mutatnt TERT genes. ***Cell Reports*** 21(13):3700-3707.
63. Fatemeh Seyednasrollah†, Devin C Koestler†, Tao Wang†, Stephen R Piccolo, Roberto Vega, Russ Greiner, Christiane Fuchs, Eyal Gofer, Luke Kumar, Russell D Wolfinger, Kimberly Kanigel Winner, J Christopher Bare, Elias Chiabub Neto, Thomas Yu, Liji Shen, Kald Abdallah, Thea Norman, Gustavo Stolovitzky, PCC-DREAM Community, Howard Soule, Christopher J Sweeney, Charles J Ryan, Howard I

Scher, Oliver Sartor, Laura L Elo‡, Fang L Zhou‡, Justin Guinney‡, **James C Costello**‡ (2017) A DREAM Challenge to build prediction models for short term discontinuation of docetaxel in metastatic castration-resistant prostate cancer. **JCO Clinical Cancer Informatics** 1:1-15.

h. Selected as a top 3 paper for the IMIA yearbook of Medical Informatics 2018 in the section 'Cancer Informatics'

i. Colorado Cancer blog post

j. Business wire post. Picked up my 18 new outlets

64. Kimberly Kanigel Winner and **James C Costello**. A spatiotemporal model to simulate chemotherapy regimens for heterogeneous bladder cancer metastases to the lung. (2017) ***Pacific Symposium for Biocomputing*** 22:611-622.
65. Justin Guinney†, Tao Wang†, Teemu D Laajala†, Prostate Cancer Challenge DREAM Community, Kimberly Kanigel Winner, J Christopher Bare, Elias Chaibub Neto, Suleiman A Khan, Gopalacharyulu Peddinti, Antti Airola, Tapio Pahikkala, Tuomas Mirtti, Thomas Yu, Brian M Bot, Liji Shen**,** Kald Abdallah, Thea Norman, Stephen Friend, Gustavo Stolovitzky, Howard Soule, Christopher J Sweeney, Charles J Ryan, Howard I Scher, Oliver Sartor, Yang Xie, PhD‡, Tero Aittokallio‡, Fang Liz Zhou‡ and **James C Costello**‡ (2017) Prediction of overall survival for patients with metastatic castration-resistant prostate cancer: development of a prognostic model through a crowdsourced challenge with open clinical trial data. ***Lancet Oncology*** 18(1):132-142.

k. Elias Tillandz prize – best 2017 paper from the University of Turku

66. Michael L. Nickerson, Nicolle Witte, Kate M. Im, Sevilay Turan, Charles Owens, Kevin Misner, Shirley X Tsang, Zhiming Cai, Song Wu, Michael Dean, **James C Costello** and Dan Theodorescu (2017) Molecular analysis of urothelial cancer cell lines for modeling tumor biology and drug response. *Oncogene* 36(1):35-46.

l. *Colorado Cancer blog post*

67. Hengbo Zhou and **James C Costello** (2017) All paths lead to TRIM25. ***Trends in Cancer*** 3(10):673-5. (*invited*)
68. Teemu D. Laajala, Justin Guinney, and **James C Costello**. Community mining of open clinical trial data. ***Oncotarget*** 8(47):81721-2. (*invited*)

2016

69. Forest Andrews, Qiong Tong, Kelly D Sullivan, Evan M Cornett, Yi Zhang, Muzaffar Ali, JaeWoo Ahn, Ahway Pandey, Angela H Guo, Brian D Strahl, **James C Costello**, Joaquin M Espinosa, Scott B Rothbart, Tatiana G Kutateladze (2016) Multivalent chromatin engagement and inter-domain corsstalk regulate MORC3 ATPase. ***Cell Reports*** 16(12):3195-207.
70. Neeraj Agarwal, Garrett M Dancik, Andrew Goodspeed, **James C Costello**, Charles Owens, Jason E. Duex and Dan Theodorescu (2016) GON4L drives cancer growth through a YY1-androgen receptor-CD24 axis. ***Cancer Research*** canres. 1099.2016.
71. Julio Saez-Rodriguez, **James C. Costello,** Stephen H. Friend, Michael R. Kellen, Lara Mangravite, Pablo Meyer, Thea Norman, and Gustavo Stolovitzky (2016) Crowdsourcing biomedical research: leveraging communities as innovation engineers. ***Nature Reviews Genetics*** 17(8):470-86.

m. *Pacific Standard post. Why Science Should be Crowdsourced – Sometimes.*

72. Andrew Goodspeed, Laura M Heiser, Joe W Gray, **James C Costello** (2016) Tumor-derived cell lines as molecular models of cancer pharmacogenomics. ***Molecular Cancer Research*** 14(1):3-13.
73. Elias Chaibub Neto, Bruce R. Hoff, Chris Bare, Brian M. Bot, Thomas Yu, Lara Mangravite, Andrew D. Trister, Thea Norman, Pablo Meyer, Julio Saez-Rodriguez, **James C. Costello**, Justin Guinney, Gustavo Stolovitzky (2016) Reducing overfitting in challenge-based competitions. ***arXiv*** 1607.00091.

2015

74. Erin M Griner, Garrett M Dancik, **James C Costello**, Charles Owens, Sunny Guin, Michael G Edwards, David L Brautigan and Dan Theodorescu (2015) RhoC is an unexpected Target of RhoGDI2 in prevention of lung colonization of bladder cancer. ***Molecular Cancer Research*** 13(3):483-92.
75. Sumit Borah, Linghe Xi, Arthur J Zaug, Natasha M Powell, Garrett M Dancik, Scott Cohen, **James C Costello**, Dan Theodorescu and Tom Cech (2015) TERT promoter mutations and telomerase reactivation in Urothelial Cancer. ***Science*** 347(6225):1006-10.

n. *Colorado Cancer blog post*

76. Lindsey Ulkus Rodrigues, Leah Rider, Cera Nieto, Lina Romero, Anis Karimpour-Fard, Massimo Loda, M Scott Lucia, Min Wu, Lihong Shi, Adela Cimic, S Joseph Sirintrapun, Rosalie Nolley, Colton Pac, Haitao Chen, Donna M Peehl, Jianfeng Xu, Wennuan Liu*, **James C Costello*** and Scott D Cramer (2015)

Coordinate loss of MAP3K7 and CHD1 promotes aggressive prostate cancer. ***Cancer Research*** 75(6):1021-1034. (*equal contribution)

o. Colorado Cancer blog post

77. Thomas Cokelaer, Mukesh Bansal, Christopher Bare, Ehran Bilal, Brian Bot, Elias Chaibub Neto, Federica Eduati, Mehmet Gönen, Steven M Hill, Bruce Hoff, Jonathan R. Karr, Michael P Menden, Pablo Meyer, Raquel Norel, Abhishek Pratap, Robert J Prill, **James C Costello**, Gustavo Stolovitzky, Julio Saez-Rodriguez (2015) DREAMTools: a Python package for scoring collaborative competitions. ***F1000Research*** 4:1030 (doi: 10.12688/f1000research.7118.1).

2014

78. **James C Costello***, Laura M Heiser*, Elisabeth Georgii*, Mehmet Gönen, Michael P Menden, Nicholas J Wang, Mukesh Bansal, Muhammad Ammad-ud-din, Petteri Hintsanen, Suleiman A. Khan, John-Patrick Mpindi, NCI DREAM Community, Olli Kallioniemi, Antti Honkela, Tero Aittokallio, Krister Wennerberg, James J Collins, Dan Gallahan, Dinah Singer, Julio Saez-Rodriguez, Samuel Kaski, Joe W Gray, and Gustavo Stolovitzky (2014) A community effort to assess and improve drug sensitivity prediction algorithms. ***Nature Biotechnology*** 32:1202-12. (*co-first author)
    p. Selected by ISCB as one of the top 10 papers of 2014
    q. Selected for a Highlights Track presentation at ISCB 2014
    r. Drug sensitivity predicted computationally,
79. Mukesh Bansal, Jichen Yang, Charles Karan, Michael P Menden, **James C Costello**, Hao Tang, Guanghua, Xiao, Yajuan Li, Jeffery Allen, Rui Zhong, Beibei Chen, Minsoo Kim, Tao Wang, Laura Heiser, Ronald Realubit, Michela Mattioli, Mariano Alvarez, Yao Shen, NCI-DREAM Community, Dan Gallahan, Dinah Singer, Julio Saez-Rodriguez, Yang Xie, Gustavo Stolovitzky, and Andrea Califano (2014) The challenge of predicting synergistic and antagonistic compound-pair activity from individual compound perturbations. ***Nature Biotechnology*** 32:1213-22.
    s. Computer model for combination therapy prediction in triple-negative breast cancer shows efficacy. GenomeWeb
80. Chu-An Wang, David Drasin, Catherine Pham, Paul Jedlicka, Vadym Zaberezhnvv, Michelle Guney, Howard Li, Raphael Nemenoff, **James C Costello**, Aik-Choon Tan and Heide Ford (2014) The homeoprotein Six2 promotes breast cancer metastasis via transcriptional and epigenetic control of E-cadherin expression. ***Cancer Research*** 74(24):7357-70.
81. Michael L Nickerson, Garrett M Dancik, Kate M Im, Michael G Edwards, Sevilay Turan, Joseph Brown, Christina Ruiz-Rodriguez, Charles Owens, **James C Costello**, Guangwu Guo, Shirley X Tsang, Yingrui Li, Quan Zhou, Zhiming Cai, Lee E Moore, M Scott Lucia, Michael Dean, and Dan Theodorescu (2014) Concurrent Alterations in *TERT*, *KDM6A*, and the BRCA Pathway in Bladder Cancer. ***Clinical Cancer Research*** 20:2935-48.
    t. *Colorado Cancer blog post*
82. **James C Costello** and Dan Theodorescu (2014) International Progress: From cytology to genomics. Decade in review -Bladder cancer. ***Nature Reviews Urology*** 11:609-11.
83. **James C Costello** and Gustavo Stolovitzky. (2014) Seeking the wisdom of crowds through challenge-based competitions in biomedical research. ***Clinical Pharmacology & Therapeutics*** 93:396-98.
    u. Journal cover image

2013

84. Ran Xue, Mikhail N Zakharov, Yu Xia, Shalender Bhasin, **James C Costello**, Ravi Jasuja (2013) EPSLiM: Ensemble predictor for short linear motifs in nuclear hormone receptors. ***Molecular Endocrinology***. 28(5):768-77.
85. Ravi Jasuja, **James C Costello**, Samudra Gangopadhyay, Rajan Singh, Vandana Gupta, Gianluca Toraldo, Hyeran Jang, Hu Li, Carlo Serra, Wen Guo, Pritibha Chauhan, Navjot S Narula, Ayla Ergun, Katie Spina, Thomas G Travison, James Collins, and Shalender Bhasin (2013) Combined administration of testosterone plus an ornithine decarboxylase inhibitor as a selective prostate-sparing anabolic therapy. ***Aging Cell*** 13(2):303-10.
86. Roi Gazit, Brian S Garrison, Tata N Rao, Tal Shay, **James C Costello**, Jeff Ericson, Francis Kim, James J Collins, Aviv Regev, Amy J Wagers, Derrick J Rossi, and The ImmGen Consortium (2013) Transcriptome analysis identifies regulators of hematopoietic stem and progenitor cells. ***Stem Cell Reports*** 1:266-80.
87. Ayla Ergun, Graeme Doran, **James C Costello**, Henry H Paik, James J Collins, Diane Mathis, Christophe Benoist, and ImmGen Consortium (2013) Differential splicing across immune system lineages.

Proceedings of the National Academy of Sciences 110:14324-29.

88. Sameer Kalghatgi, **James C Costello**, Catherine Spina, Anthony Molina, and James J Collins (2013) Bactericidal antibiotics induce mitochondrial dysfunction and oxidative damage via a common mechanism in mammalian cells. ***Science Translational Medicine*** 5:190ra81.
    v. Kurilla M: F1000Prime Recommendation of [Kalghatgi S et al., Sci Transl Med 2013 5(192):192ra85]. In F1000Prime, 31 Jul 2013; 10.3410/f.718042423.793480715
    w. Piddock L and Anuforom O: F1000Prime Recommendation of [Kalghatgi S et al., Sci Transl Med 2013 5(192):192ra85]. In F1000Prime, 03 Sep 2013; 10.3410/f.718042423.793482481

2012 and older

89. Lawrence Kwong, **James C Costello**, Huiyun Liu, Giannicola Genovese, Shan Jiang, Joseph H Jeong, Ryan P Bender, James J Collins, and Lynda Chin (2012) RAS acts as a multi-state rheostat to differentially regulate survival and proliferation in cancer. ***Nature Medicine*** 18:1503-10.
    x. White F: F1000Prime Recommendation of [Kwong LN et al., Nat Med 2012 18(10):1503-1510]. In F1000Prime, 23 May 2016; 10.3410/f.718770312.793518438
90. Daniel Marbach*, **James C Costello***, Robert Kueffner*, Nicole M Vega, Robert Prill, Diogo M Camacho, Kyle R Allison, the DREAM5 Consortium, Manolis Kellis, James J Collins, and Gustavo Stolovitzky (2012) Wisdom of crowds for robust gene network inference. ***Nature Methods*** 9(8):796-804. (***co-first author**)
    y. Journal cover image
    z. Subject of 6 separate blog posts
91. Jennifer C Miller, Brian D Brown, Tal Shay, Emmanuel L Gautier, Vladimir Jojic, **the Immunological Genome Project Consortium**, and *et al.* (2012) Deciphering the transcription network of the dendritic cell lineage. ***Nature Immunology*** 13:888-99.
92. Natalia A Bezman, Charles C Kim, Joseph C Sun, Gandula Min-Oo, Deborah W Hendricks, **the Immunological Genome Project Consoritum**, and *et al.* (2012) Molecular definition of the identity and activation of natural killer cells. ***Nature Immunology*** 13:1000-09.
93. Kavitha Narayan, Katelyn E Sylvia, Nidhi Malhotra, Catherine C Yin, Gregory Martens, **the Immunological Genome Project Consortium**, and *et al.* (2012) Intrathymic programming of effector fates in three molecularly distinct gamma-delta T cell subtypes. ***Nature Immunology*** 13:511-18.
94. Deepali Malhotra, Anne L Fletcher, Jilian Astarita, Veronika Lukas-Kornek, Prakriti Tayalia, **the Immunological Genome Project Consortium**, and *et al.* (2012) Transcriptional profiling of stroma from inflamed and resting lymph nodes defines immunological hallmarks. ***Nature Immunology*** 13:499-510.
95. Michio W Painter, Scott Davis, Richard R Hardy, Diane Mathis, Christophe Benoist, and **the Immunological Genome Project Consortium**. (2011) Transcriptomes of the B and T lineages compared by multiplatform microarray profiling. ***Journal of Immunology*** 186(5):3047-57.
96. **James C Costello**, Mehmet M Dalkilic, Scott M Beason, Jeff R Gehlhausen, Rupali Patwardhan, Sumit Middha, Brian D Eads, and Justen R Andrews (2009) Gene networks in Drosophila melanogaster: Integrating experimental data to predict gene function. ***Genome Biology*** 10:R97.
97. Teiya Kijimoto, **James C Costello**, Zuojian Tang, Armin P Moczek, and Justen R Andrews (2009) EST and microarray analysis of horn development in Onthophagus beetles. ***BMC Genomics*** 10:504.
98. Daniel R Schrider, **James C Costello,** and Matthew W Hahn (2009) All human-specific gene losses are present in the genome as pseudogenes. ***Journal of Computational Biology*** 16:1419-27.
99. **James C Costello**, Daniel R Schrider, Jeff R Gehlhausen, and Mehmet M Dalkilic (2009) Data-driven ontologies. ***Pacific Symposium on Biocomputing*** 14:15-26.
100. Yong Li, **James C Costello**, Alisha K Holloway, and Matthew W Hahn (2008) Reverse ecology and the power of population genomics. ***Evolution*** 62:2984-94.
101. **James C Costello**, Mira V Han, and Matthew W Hahn (2008) Limitations of pseudogenes in identifying gene losses. ***In Proceedings of Recomb-CG*** Paris, France
102. **James C Costello**, Amy Cash, Mehmet M Dalkilic, and Justen R Andrews (2008) Data Pushing: a Fly-centric guide to Bioinformatics tools. ***Fly*** 2(1):1-18.
103. Mehmet M Dalkilic, **James C Costello**, Wyatt Clark, and Predrag Radivojac (2008) From protein-disease associations to disease informatics. ***Frontiers in Bioscience*** 13:3391-3407.
104. Drosophila 12 Genomes Consortium* (2007) Evolution of genes and genomes on the Drosophila phylogeny. ***Nature*** 450(7167):203-218. (*Consortium member)
105. **James C Costello**, Jade Buchannan-Carter, Mehmet M Dalkilic, and Justen R Andrews (2007) Integrating Drosophila data to discover disease-related protein interactions in human. ***IEEE Symposium on Computational Intelligence in Bioinformatics and Computational Biology*** Honolulu, HI
106. Mehmet M Dalkilic, Wyatt Clark, **James C Costello**, and Predrag Radivojac (2006) Using

compression to identify classes of inauthentic texts. ***In Proceedings SIAM Conference on Data Mining*** Bethesda, MD. 603-607.

107. Brian Eads, Amy Cash, Kevin Bogart, **James C Costello**, and Justen R Andrews (2006) Troubleshooting microarray hybridizations. ***Methods in Enzymology*** 411:34-49.
108. Mehmet M Dalkilic and **James C Costello**. (2004) BioKnOT: Biological Knowledge through Ontologies and TFIDF. ***In Proceedings ACM SIGIR Workshop: Search and Discovery in Bioinformatics*** Sheffield, UK. 2004
109. Mehmet M Dalkilic, **James C Costello**, and Arjjit Sengupta (2004) Semantic Thumbnails: A novel method for summarizing document collections. ***In Proceedings ACM SIGDOC*** Memphis, TN
110. Kazuhiro Seki, **James C Costello**, Vasanth Singhan, and Javed Mostafa (2004) TREC 2004 genomic track experiments. ***In Proceedings of TREC 2004; Genomics Track*** 2004

Media/Interviews/Perspectives

1. Teaming up to overcome cancer's resistance to therapies. June 29, 2026. https://news.cuanschutz.edu/cancer-center/costello-aspire-npepps
2. Combating Chemotherapy Resistance. Dec. 13, 2024. https://news.cuanschutz.edu/news-stories/cancer-combating-chemotherapy-resistance
3. Researchers discover a mechanism that could improve platinum-based cancer therapy. March 27, 2024. https://news.cuanschutz.edu/news-stories/researchers-discover-a-mechanism-that-could-improve-platinum-based-cancer-therapy
4. March of Dimes Global Crowdsourcing Effort Yields Pair of Predictive Models for Preterm Birth. December 21, 2023. https://www.marchofdimes.org/about/news/march-dimes-global-crowdsourcing-effort-yields-pair-predictive-models-preterm-birth
5. Preterm birth predicted using new approach for harmonizing diverse microbiome data. December 21, 2023. https://www.michiganmedicine.org/health-lab/preterm-birth-predicted-using-new-approach-harmonizing-diverse-microbiome-data
6. CU Cancer Center researcher among team investigating bladder cancer that doesn't respond to treatment. July 12, 2023. https://news.cuanschutz.edu/cancer-center/bladder-cancer-nonresponsive
7. Members of the Crnic Institute obtain $18M in new funding from the National Institutes of Health. Sept 23, 2022. https://news.cuanschutz.edu/linda-crnic-institute/members-of-the-crnic-institute-obtain-18m-in-new-funding-from-the-national-institutes-of-health
8. AI model can quantify radiographic joint damage in rheumatoid arthritis. Sept 2, 2022 https://medicalxpress.com/news/2022-09-ai-quantify-radiographic-joint-rheumatoid.html
9. $3 million for research on bladder cancer and chemotherapy. Aug 3, 2022. https://amazingerasmusmc.com/urology/3-million-for-research-on-bladder-cancer-and-chemotherapy/
10. Better treatment for aggressive prostate cancer. April 12, 2021. https://news.cuanschutz.edu/cancer-center/better-treatment-for-aggressive-prostate-cancer
11. Can crowd-sourcing help advance open science? Dec 10, 2020. https://network.febs.org/posts/can-crowd-sourcing-help-advance-open-science
12. Community climbing competition raises funds for the CU Cancer Center research. Colorado Cancer Blogs. Feb. 17, 2020. https://coloradocancerblogs.org/heart-soul-rock-climbing/
13. CU Cancer Center project makes big data analysis accessible to Anschutz Campus researchers. Colorado Cancer Blogs. Dec. 5, 2019. https://coloradocancerblogs.org/data-analysis-tools-anschutz/
14. Search tightens for genes driving prostate cancer. Colorado Cancer Blogs. Sep. 12, 2019. https://coloradocancerblogs.org/u01-targeted-treatment-prostate-cancer/
15. Scientists don't have to travel alone; solutions can come from the crowd. *Atlas of Science*. September 21, 2017. http://atlasofscience.org/scientists-dont-have-to-travel-alone-solutions-can-come-from-the-crowd/
16. Crowdsourcing better predictive models. *Prostatepedia*. May 2017. https://www.prostatepedia.net/
17. Community-wide effort to use open clinical trial data for the quantitative prediction of outcomes in metastatic prostate cancer. *Practice Update*. April 29, 2015. https://www.practiceupdate.com/content/community-wide-effort-to-use-open-clinical-trial-data-for-the-quantitative-prediction-of-outcomes-in-metastatic-prostate-cancer/23507/12/3/1
18. Prediction mutations in high-grade bladder cancer. *Practice Update*. Feb 15, 2015. https://www.practiceupdate.com/content/predictive-mutations-in-high-grade-bladder-cancer/21874/12/3/1