# ­­David Peter Kao, M.D.

Associate Professor of Medicine, Division of Cardiology

Jacqueline Marie Schauble Leaffer Endowed Chair in Women’s Heart Disease

Medical Director, Colorado Center for Personalized Medicine

Medical Director, UCHealth CARE Innovation Center

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## Education

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| --- | --- |
| BS, Biomedical Engineering, The Johns Hopkins University, Baltimore, MD | 1998 |
| MD, The Johns Hopkins University, Baltimore, MD | 2003 |

## Training

|  |  |
| --- | --- |
| Internship, Internal Medicine, Stanford Hospital and Clinics, Stanford, CA | 2003-4 |
| Residency, Internal Medicine, Stanford Hospital and Clinics, Stanford, CA | 2004-6 |
| Chief Resident, Internal Medicine, Stanford Hospital and Clinics, Stanford, CA | 2006-7 |
| Postdoctoral Fellow Supervisor: Amar Das, M.D., Ph.D. Division of Biomedical Informatics Research, Stanford University School of Medicine, Stanford, CA | 2007-8 |
| Fellowship, General Cardiology, University of Colorado School of Medicine, Aurora, CO | 2008-11,14 |

## Academic Appointments

|  |  |
| --- | --- |
| Research Instructor Dept. of Medicine, University of Colorado School of Medicine, Aurora, CO | 2012-4 |
| Assistant Professor Dept. of Medicine, University of Colorado School of Medicine, Aurora, CO | 2015-21 |
| Associate Professor  Dept of Medicine, University of Colorado School of Medicine, Aurora, CO | 2021- |
| Jacqueline Marie Schauble Leaffer Endowed Chair in Women’s Heart Disease, Ludeman Family Center for Women’s Health Research, University of Colorado Anschutz Medical Campus, Aurora, CO | 2024- |

## Other Positions and Employment

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| --- | --- |
| Pre-doctoral research fellow, National Institutes of Allergy and Infectious Disease Hamilton, MT. Advisor: Robert J Belland, Ph.D. | 1998-9 |
| Hospitalist, Eden Medical Center, Castro Valley, CA | 2006-8 |
| Analyst/Ontologist, Research Informatics, Childrens Hospital Colorado, Aurora, CO | 2011-6 |
| Physician informaticist, UCHealth Clinical Decision Support Program, Aurora, CO. Supervisor: CT Lin, MD | 2012- |
| Adjunct Faculty, Computational Bioscience Program, University of Colorado School of Pharmacology, Aurora, CO. | 2014- |
| Chairman, Clinical Decision Support Steering Committee, University of Colorado Health, Aurora, CO | 2015- |
| Secondary faculty, Division of Biomedical Informatics and Personalized Medicine, University of Colorado School of Medicine | 2016-21 |
| Member, Division of Biomedical Informatics and Personalized Medicine Executive Steering Committee, University of Colorado, Aurora, CO | 2016-21 |
| Member, Joint ACC/AHA Task Force on Clinical Data Standards | 2016-8 |
| Co-Chairman, Pharmacogenomics Implementation Committee, University of Colorado School of Medicine, Aurora, CO | 2016- |
| Member, Digital Health Working Group, Inova Heart Failure Collaboratory and Think Tank, Falls Church, VA | 2017- |
| Member, Colorado Center for Personalized Medicine Executive Committee | 2020- |
| Medical Director, Colorado Center for Personalized Medicine, Aurora, CO | 2020- |
| Medical Director, UCHealth CARE Innovations Center, Aurora, CO | 2022- |
| Member, Artificial Intelligence/Machine Learning Advisory Group, American Heart Association | 2023- |
| Associate Editor, Circulation: Cardiovascular Quality and Outcomes | 2024- |

**Medical Licenses**

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| --- | --- |
| Colorado Medical License 48010 | 2008- |
| California Medical License A87967 | 2004- |
| US Drug Enforcement Agency FK4241484 |  |

**Board Certification**

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| --- | --- |
| Internal Medicine (American Board of Internal Medicine) | 2006- |
| Cardiovascular Medicine (American Board of Internal Medicine) | 2018- |
| Clinical Informatics (American Board of Preventive Medicine) | 2022- |

## Honors and Awards

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| --- | --- |
| Tau Beta Pi Engineering Honor Society  Whiting School of Engineering, The Johns Hopkins University | 1996 |
| Ranked first in graduating class  Whiting School of Engineering, The Johns Hopkins University | 1998 |
| Richard J. Johns Award for outstanding achievement in biomedical engineering  Whiting School of Engineering, The Johns Hopkins University | 1998 |
| Outstanding First Year Fellow 2008-2009  Division of Cardiology, University of Colorado School of Medicine | 2009 |
| Outstanding Research Fellow 2010-2011  Division of Cardiology, University of Colorado School of Medicine | 2011 |
| Big Data Course for Computational Medicine Fellowship  NIH Big Data to Knowledge (BD2K) Program, Mayo Clinic | 2015 |
| Big Data Analysis Challenge: Creating New Paradigms for HF Research  National Heart, Lung, and Blood Institute [link](https://www.nhlbi.nih.gov/grants-and-training/funding-opportunities-and-contacts/NHLBI-heart-failure-data-challenge/selected-solutions)($50,000) | 2020 |

## Professional Memberships and Activities

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| --- | --- |
| American College of Cardiology  Member | 2008- |
| American Medical Informatics Association  Member | 2009- |
| American Heart Association  Member | 2011- |
| Heart Failure Society of America  Member | 2011- |
| European Society of Cardiology Heart Failure Association  Member | 2016- |

## Editorial Activities

**Reviewer (**<https://publons.com/researcher/2605985/david-p-kao/>)

|  |  |
| --- | --- |
| British Medical Journal  Journal of Biomedical Informatics |  |
| Circulation: Heart Failure |  |
| Circulation Research |  |
| JACC: Heart Failure |  |
| Journal of the American Heart Association |  |
| European Heart Journal |  |
| American Heart Journal |  |
| Journal of American College of Cardiology |  |
| Heart |  |
| Journal of Cardiac Failure |  |
| JACC: Basic and Translational Science |  |
| Journal of the American Heart Association |  |
| European Journal Heart Failure |  |
| Nature Scientific Reports |  |

## Extramural Grant Review

1. *American Heart Association Institute for Precision Cardiovascular Medicine* – Artificial Intelligence and Machine Learning Grants (2018)
2. *Netherlands Organization for Health Research and Development (ZonMw)* – Health Care Efficiency Research Program (2020)
3. *Canadian Institutes of Health Research* – Heart Failure Research Network (2022)

## Educational Activities

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| Teaching Activities |  |
| Computerized decision support, PHRD 7965: Health Care Informatics  Lecturer, University of Colorado School of Pharmacy, Aurora, CO | 2015-6 |
| Cardiovascular disease sub-block small group preceptor  University of Colorado School of Medicine, Aurora, CO | 2015 |
| Practical use of publicly available data repositories, BIOS 6685: Intro to Public Health Informatics Course, Colorado School of Public Health | 2016 |

**Advising and Mentoring Activities**

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| --- | --- | --- | --- |
| Students | |  | |
| 1. Jeffrey Lewis, University of Colorado School of Medicine   Role: Mentored Scholarly Activity, Primary Mentor  Current Position: Family Physician, UCHealth | | 2013 | | |
| Residents | |  | | |
| 1. Elma Kreso, University of Colorado   Role: Research Mentor  Current Position: Internal Medicine, Colorado Permanente Medical Group, Denver, CO | | 2009-11 | | |
| 1. Eric Wang, University of Colorado   Role: Research Mentor  Current Position: Hospitalist, Harborview Medical Center, Seattle, WA | | 2016 | | |
| 1. Maggie Butler, University of Colorado   Role: Research Mentor  Current Position: Hospitalist, West Jefferson Medical Center, Marrero, LA | | 2016-8 | | |
| 1. Miranda Merrill, University of Colorado   Role: Research Mentor  Current Position: Fellow, General Cardiology, Oregon Health Sciences Univ\* | | 2016-8 | | |
| 1. Peter Hyson, University of Colorado   Role: Research Mentor  Current position: Infectious Disease Fellow, University of Vermont Medical Center, Burlington, VT\* | | 2019-20 | |
| 1. Maeveen Riordan, University of Colorado   Role: Research Mentor  Current position: Fellow, General Cardiology, University of Colorado\* | | 2020- | |
| 1. Katarina Leyba, University of Colorado   Role: Research Mentor  Current position: Resident, Internal Medicine, University of Colorado\* | | 2021- | |
| 1. Ellen Brinza, University of Colorado   Role: Research Mentor:  Current position: Resident, Internal Medicine, University of Colorado\* | | 2022- | |
| PhD Candidates | |  | | |
| 1. Michael Hinterberg, University of Colorado   Role: Computational Biology, PhD Advisory Committee  Current Position: PhD staff scientist, SomaLogic\* | | 2014-6 | |
| 1. Laura Stevens, University of Colorado   Role: Computational Biology, PhD Advisory Committee | | 2016-22 | |
| 1. Amena Keshawarz, University of Colorado   Role: Department of Epidemiology, PhD Advisory Committee  Current Position: Associate Research Scientist, Yale University\* | | 2018-20 | |
|  | |  | |
| **Postdoctoral Trainees/Fellows** | |  | |
| 1. Ellise Gambahaya, University of Zimbabwe College of Health Sciences   Role: Cardiovascular Research Mentor  Current Position: Research Scholar, University of Zimbabwe\* | | 2012-7 | |
| 1. Paradzai Gapu, University of Zimbabwe College of Health Sciences   Role: Cardiovascular Research Mentor  Current Position: Attending Physician, Cardiology, University of Zimbabwe | | 2012-4 | |
| 1. Tafadzwa Zikhali, University of Zimbabwe College of Health Sciences   Role: Cardiovascular Research Mentor  Current Position: Specialist Physician, Amstes Internal Medicine Practice, Windhoek, Namibia | | 2012-4 | |
| 1. Caroline Musemwa, University of Zimbabwe College of Health Sciences   Role: Cardiovascular Research Mentor  Current Position: Consulting Physician, Harare, Zimbabwe | | 2012-4 | |
| 1. Tsungai Chipamaunga, University of Zimbabwe College of Health Sciences   Role: Cardiovascular Research Mentor  Current Position: Attending Cardiologist, Tygerberg Academic Hospital, Cape Town, South Africa\* | | 2012-4 | |
| 1. Andrew Mataruse, University of Zimbabwe College of Health Sciences   Role: Cardiovascular Research Mentor  Current Position: Attending Neurologist, University of Zimbabwe | | 2012-4 | |
| 1. Jennifer Jarvie, University of Colorado   Role: T32 Cardiovascular Research Mentor  Current Position: General cardiologist, Denver Heart, Denver, CO | | 2016-8 | |
| 1. Kelsey Flint, University of Colorado   Role: Cardiovascular Research Mentor  Current Position: Cardiologist, South Denver Cardiology Associates | | 2016-9 | |
| 1. Katie Derington, University of Colorado   Role: Member, Master’s Final Project Committee  Current Position: Research Assistant Professor, University of Utah\* | | 2017-9 | |
| 1. Suneet Purohit, University of Colorado   Role: Research Mentor  Current position: Advanced heart failure specialist, Anchorage, AK | | 2017-9 | |
| 1. Bethany Doran, University of Colorado   Role: Cardiovascular Research Mentor  Current Position: Founder, Enabled Healthcare\* | | 2018-9 | |
| 1. Stanley Swat, University of Colorado   Role: Research Mentor  Current position: Advanced Heart Failure Fellow, Northwestern University\* | | 2022-3 | |
| 1. Prerna Gupta, University of Colorado   Role: Research Mentor  Current position: Research Fellow (T32), Cardiology, University of Colorado\* | | 2022- | |
| **Faculty** | |  | |
| 1. Katy Trinkley, University of Colorado   Role: Research Mentor  Current position – Associate Professor, Skaggs School of Pharmacy\* | | 2015- | |

**Grants**

*Current*

National Heart, Lung, and Blood Institute 1 R21HL161761 PI: Kao 2023-24

Title: Phenotyping Heart Failure through Analysis of Secondary Data (PHASED)

The primary goal of this project is to leverage large, harmonized data resources comprised of a broad range of patients with heart failure (HF) by using machine learning (ML) to develop and test complex models to predict clinical outcomes and identify HF phenotypes that may be clinically important based on pathophysiology, prognosis, and treatment response. [link](https://reporter.nih.gov/search/pfRdZJywWkmVrQs_v5ow7w/project-details/10581057)

*Role*: Principal Investigator

*Annual direct costs*: $77,648

NHLBI 1 R01HL171180 PI: Allen 2024-

Title: Implementation and Interaction of Clinician and Patient-facing Tools Aiming to Intensify Neurohormonal medicines for Heart Failure with reduced ejection fraction (I-I-CAPTAIN-HF).

The purpose of this multicenter study is to deploy at least 2 clinical decision support tools at 4 healthcare systems to improve guideline-directed medical therapy (GDMT) for patients with HFrEF. [link](https://www.pcori.org/research-results/2023/implementation-and-interaction-clinician-and-patient-facing-tools-aiming-intensify-neurohormonal-medicines-heart-failure-reduced-ejection-fraction)

*Role*: Co-Investigator

*Annual direct costs*: $1,407,997

*Completed*

NLM Training Grant T15 LM007033 PI: Altman 2007-8

Title: Graduate Training in Biomedical Informatics

The program offers intensive training in biomedical informatics, specifically core biomedical informatics, domain biology or medicine, computer science, probability and statistics, and ethical, legal, and social issues. [link](https://projectreporter.nih.gov/project_info_description.cfm?aid=7651363&icde=52109068&ddparam=&ddvalue=&ddsub=&cr=11&csb=default&cs=ASC&pball=)

*Role*: Trainee

NHBLI Training Grant T32 HL007822 PI: Buttrick 2010-2

Title: Post-graduate Studies in Cardiovascular Research

This training grant award supports development of technologies for high-throughput analysis of cardiovascular data to identify and characterize heart failure subtypes regarding implications for personalization of heart failure management. [link](https://projectreporter.nih.gov/project_info_description.cfm?aid=7827996&icde=52109074&ddparam=&ddvalue=&ddsub=&cr=17&csb=default&cs=ASC&pball=)

*Role*: Trainee

Ludeman Family Center for Women's Health Research PI: Kao 2012-4

Title: Mentored Research in Women’s Health, Sex Differences, and CV Disease

The goal of this work is to use large existing databases such as hospital discharge data and clinical trial to study sex differences in cardiovascular disease.

*Role*: Principal investigator

*Annual direct costs*: $34,710

NHBLI Loan Repayment Program L30 HL110124 PI: Kao 2012-4, 17-21

Title: Personalizing heart failure management by integrating clinical and molecular data

The goal of this work is to develop methods, infrastructure, and analytics strategies to elucidate mechanisms and identify predictors of drug response in heart failure.

*Role*: Principal investigator

*Annual direct costs*: $37,500

Fogarty International Center R24 TW008905 PI: Hakim 2012-5

Title: Cerebrovascular, Heart Failure, Rheumatic Heart Disease Interventions Strategy Initiative

The goal of this work is to develop a self-sustaining academic division of cardiology at the University Zimbabwe to train future generations of Zimbabwean cardiologists. [link](https://grantome.com/grant/NIH/R24-TW008905-01)

*Role*: Co-investigator training Zimbabwean scholars in conduct of clinical cardiovascular research [link](https://reporter.nih.gov/search/7eI2rzmwGUKXciKzc7kSpQ/project-details/8073685)

*Annual direct costs*: $500,000

Ludeman Family Center for Women's Health Research Seed Grant PI: Kao 2015-6

Title: Identification and characterization of gender-specific heart failure phenotypes

The goal of this work is to combine primary data from completed heart failure studies to form a large aggregate data set for the purposes of identifying gender-specific heart failure phenotypes, associated clinical outcomes, and differential treatment response for the purposes of personalizing heart failure management.

*Role*: Principal Investigator

*Annual direct costs*: $25,000

American Heart Association CVGPS 15CVGPSD27090024 PI: Kao 2015-6

### Title: Characterization of molecular profiles in complex phenotypes associated with Heart Failure with Preserved Ejection Fraction

This study will identify genetic and gene expression features associated with divergent phenotypes of heart failure with preserved ejection fraction (HFpEF) to better understand the pathogenesis of HFpEF and identify potential novel therapeutic targets for future study.

*Role*: Principal Investigator

*Annual direct costs*: $145,000

Agency for Healthcare Research and Quality R21 HS024124 PI: Meguid 2015-7

Title: Surgical Risk Preoperative Assessment System (SURPAS)

This is a proposal to develop tools to provide quantitative estimates of operative mortality and morbidity preoperatively to the patient, family, and the surgical team based on the American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP) database at the University of Colorado Hospital (UCH). [link](https://projectreporter.nih.gov/project_info_description.cfm?aid=8954888&icde=50329191&ddparam=&ddvalue=&ddsub=&cr=1&csb=default&cs=ASC&pball=)

*Role*: Co-Investigator

*Annual direct costs*: $100,000

### Fogarty International Center R25 TW010009 PI: Hakim 2015-8

Title: Promote Research through ICT Excellence (PRICE)

The goal of this work is to establish local expertise and create educational resources to train future clinical researchers at University of Zimbabwe in use of information and communication technology including mobile devices to conduct clinical research. [link](https://projectreporter.nih.gov/project_info_description.cfm?aid=8848579)

*Role*: Co-investigator/Primary Site Investigator

*Annual direct costs*: $100,000

Centers for Disease Control NU50DD004935 PI: Crume 2015-9

Title: Surveillance of Congenital Heart Defects Across the Lifespan

A team of epidemiologists, health informaticists, adolescent and adult congenital heart disease cardiologists with support from public health institutions in Colorado including the Colorado Department of Health and Environment (CDPHE) will develop a state-wide population-based surveillance system of CHDs among individuals aged 11-64. In addition, we will conduct extended surveillance of low-income adolescents and adults who receive care from a safety-net provider network. [link](https://taggs.hhs.gov/Detail/AwardDetail?arg_AwardNum=NU50DD004935&arg_ProgOfficeCode=281)

*Role*: Co-investigator

*Annual direct costs*: $450,000

UC SOM Dean’s Transformational Center Award PI: Kahn/Ho 2016-7

Title: Data Driven Decisions and Discovery

The purpose of this award is to combine enterprise clinical data warehousing, robust data science methods, implementation science and outcomes analysis to identify and disseminate high-value care practices across a large health system. [link](https://www.ucdenver.edu/academics/colleges/medicalschool/programs/d2V/Pages/D2V.aspx)

*Role*: Co-lead, Informatics Core

American Heart Association 17IG33660301 PI: Kao 2017-9

Title: Aggregate Data to Accelerate Personalizing Treatment of Heart Failure

The purpose of this award is to develop methods and technical infrastructure for harmonizing clinical trial data using standardized terms in order to support data mining analysis. [link](https://app.dimensions.ai/details/grant/grant.100057017)

*Role*: Principal Investigator

*Annual direct costs*: $80,000

American Heart Association 18UNPG34030044 PI: Görg 2018-9

Title: Analyzing Data to Accelerate Personalization of Treatment using Interactive Visual Exploration - Heart Failure (ADAPTIVE-HF)

The goals of this proposal are the development and deployment of interactive tools for data exploration and data mining in the AHA’s Precision Medicine Platform to enable characterization and prediction of survival and treatment response of patients from 19 completed heart failure clinical trials, and ultimately accelerate the personalization of treatment.

*Role*: Co-investigator

*Annual direct costs*: $150,000

UC SOM Dean’s Transformational Center Award PI: McKinsey 2016-20

Title: Center for Fibrosis Research and Translation

This award will create a center of excellence including faculty, pilot grants, and physical resources to study similarities and differences in characteristics of fibrosis across tissues from multiple organs with the intent of identifying novel pharmacologic therapies. [link](https://medschool.cuanschutz.edu/consortium-for-fibrosis-research-translation)

*Role*: Informatics lead

American Heart Association 16SFRN29580008 PI: Buttrick 2016-20

Title: A Comprehensive Approach to the Treatment of Heart Failure with Reduced Ejection Fraction

This proposal includes three complementary research projects all focused on gaps in our knowledge of HFrEF. Project 1 seeks to identify new therapeutic targets for heart failure and will focus on the role of histone deacetylase inhibition (HDAC-I) and the linked bromodomain proteins. Project 2 focuses on the cellular mechanisms by which patients with dilated, non-ischemic cardiomyopathy fail to respond to beta blocker therapy. Project 3 focuses on the difficulty in treating patients with optimal, evidence-based therapy. [link](https://professional.heart.org/-/media/PHD-Files/Research/Strategically-Focused-Research-Networks-Media-Folder/End-of-Network-Reports/DS18264-Heart-Failure-SFRN-Narrative-Report-92221.pdf)

*Role*: Co-investigator

American Heart Association 18IDHP34660267 PI: Musen 2018-20

Title: Clinical Trials Data to Drive Precision Management of Cardiovascular Disease

The purpose of this award is to develop technology and infrastructure in the AHA’s cloud-based Precision Medicine Platform to support harmonization of patient- and study-level data/metadata to support secondary analysis of clinical trial data hosted by the NHLBI’s BioLINCC resource. [link](https://app.dimensions.ai/details/grant/grant.100067966)

*Role*: Site/Co-Investigator

*Annual direct costs*: $150,000

NHLBI 1 K08HL125725 PI: Kao 2017-22

Title: Development of a Closed-Loop Integrated Framework For discovery of Novel Treatment Strategies in Heart Failure (CLIFFNOTES-HF)

The purpose of this Career Development Award is to gain skills and experience in using real-world clinical data to construct a data warehouse, perform complex statistical and data mining analyses to identify personalized management strategies for heart failure patients and implement these findings in an electronic health record. [link](https://projectreporter.nih.gov/project_info_description.cfm?aid=9243492&icde=50329183&ddparam=&ddvalue=&ddsub=&cr=1&csb=default&cs=ASC&pball=)

*Role*: Principal Investigator

*Annual direct costs*: $175,733

**Clinical Practice**

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| Certification and Licensure |  |
| Diplomate, Internal Medicine, American Board of Internal Medicine | 2006-16 |
| Diplomate, Cardiovascular Disease, American Board of Internal Medicine | 2018-28 |
| Diplomate, Clinical Informatics, American Board of Preventive Medicine | 2022-32 |
| *State Medical Licenses*:  Colorado: 2008-present  California: 2003-2009, 2018-2020 |  |
| *Clinical Specialties* |  |
| Internal Medicine, General Cardiology | 2003- |
| General Cardiology | 2015- |
|  |  |
| Clinical Activities |  |
| General Cardiology, University of Colorado Health, Aurora, CO | 2015- |

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| **Clinical Innovations and Quality Improvement Projects** |  |
| Physician informaticist, Clinical Decision Support  University of Colorado Health, Aurora, CO  The purpose of this program is to develop and use a framework for implementation of real-time complex decision support applications across the entire University of Colorado Health system, currently 5 hospitals and 400+ outpatient clinics. | 2012- |
| Co-chairman, Pharmacogenomics Implementation Committee of Colorado, Colorado Center for Personalized Medicine, Aurora, CO  This is a joint effort between CCPM, School of Pharmacy, School of Medicine, and UC Health to transfer pharmacogenomic data generated by CCPM to UC Health's Epic EMR for point-of-care pharmacogenetic decision support. | 2016- |
| Co-chair, Clinical Intelligence Steering Committee, UCHealth, Aurora, CO  This committee is comprised of UCHealth executive officers, directors of informatics service lines, and university research informatics. It evaluates and oversees large, multidisciplinary informatics initiatives across the UCHealth system. | 2018- |

Impact metrics:

*Publons*: h-index: 28 (2144 citations) <https://www.webofscience.com/wos/author/record/1553932>

*Google*: h-index: 31 (3159 citations) <https://scholar.google.com/citations?user=lAK-TRIAAAAJ&hl=en>

*ORCID*: <https://orcid.org/0000-0002-2832-9348>

*NCBI*: <https://www.ncbi.nlm.nih.gov/myncbi/david.kao.1/bibliography/public/>

*Scopus*: h-index: 27 (2297 citations) <https://www.scopus.com/authid/detail.uri?authorId=25223347900>

**Peer-reviewed publications**

1. Swanson J, Dorward D, Lubke L, **Kao D**. Porin Polypeptide Contributes to Surface Charge of Gonococci. J Bacteriol. 1997;197(11):3541-3548. PMC179146. [link](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC179146/)
2. Bos MP, **Kao D**, Hogan D, Grant C, Belland RJ. Carcinoembryonic Antigen Family Receptor Recognition by Gonococcal Opa Proteins Requires Distinct Combinations of Hypervariable Opa Protein Domains. Infect Immun. 2002;70(4):1715-1723. PMC127850. [link](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC127850/)
3. Ziegelstein RC, Kim SY, **Kao D**, Fauerbach JA, McCann, U, Colburn J, Bush DE. Can Doctors and Nurses Recognize Depression in Patients Hospitalized with an Acute Myocardial Infarction in the Absence of Formal Screening? Psychosom Med. 2005;67(3):393-7. [link](https://pubmed.ncbi.nlm.nih.gov/15911901/)
4. Dormady SP, Mariappan MR, **Kao D**, Gotlib J. Use of urine flow cytometry to verify relapse of Burkitt’s lymphoma in the genitourinary system. J Clin Oncol. 2006;24(27):4515-6. [link](https://pubmed.ncbi.nlm.nih.gov/16983121/)
5. Witteles RM, **Kao D**, Christopherson D, Matsuda K, Vagelos R, Schreiber D, Fowler MB. Impact of nesiritide on renal function in patients with acute decompensated heart failure and pre-existing renal dysfunction a randomized, double-blind, placebo-controlled clinical trial. J Am Coll Cardiol. 2007;50(19):1835-40. [link](https://pubmed.ncbi.nlm.nih.gov/17980248/)
6. **Kao DP**, Kohrt HE, Kugler J. Renal failure and rhabdomyolysis associated with sitagliptin and simvastatin use. Diabet Med. 2008;25(10):1229-30. PMC2602841. [link](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2602841/)
7. **Kao DP**. What can we learn from drug marketing efficiency? BMJ. 2008;338:141-4. PMC3230247. [link](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3230247/)
8. **Kao DP**, Witteles RM, Quon A, Wu JC, Gambhir SS, Fowler, MB. Rosiglitazone increases myocardial glucose metabolism in insulin-resistant cardiomyopathy. J Am Coll Cardiol. 2010;55(9):926-7. PMC3835683. [link](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3835683/)
9. Yoon GJ, Telli ML, **Kao DP**, Matsuda K, Carlson RW, Witteles RM. Left ventricular dysfunction in patients receiving cardiotoxic cancer therapies: Are clinicians responding optimally? J Am Coll Cardiol. 2010;56(20):1644-50. PMC3835691. [link](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2602841/)
10. **Kao DP**, Kreso E, Dale RA, Fonarow GC, Krantz MJ. Characteristics and outcomes among heart failure patients with anemia and renal insufficiency with and without blood transfusions (Public Discharge Data from California 2000-2006). Am J Card. 2011;107(1):69-73. PMC3835688. [link](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3835688/)
11. Hakim JG, Matenga JA, Havranek E, **Kao DP**. Healthcare workforce development with a focus on CVD in Zimbabwe. Global Heart. 2011;6:219-220. PMC4354847. [link](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4354847/)
12. **Kao DP**, Hiatt WR, Krantz MJ. Proarrhythmic potential of dronedarone: emerging evidence from spontaneous adverse event reporting. Pharmacotherapy 2012;32(8):767-71. PMC3463717. [link](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3463717/)
13. **Kao DP**, Martin MH, Das AK, Ruoss SJ. Consequences of federal patient transfer regulations: effect of the 2003 EMTALA revision on a tertiary referral center and evidence of possible misuse. Arch Int Med. 2012;172(11):891-2. PMC3507997. [link](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3507997/)
14. **Kao DP**, Wagner BD, Robertson AD, Bristow MR, Lowes BD. A personalized BEST: Characterization of latent clinical classes of nonischemic heart failure that predict outcomes and response to bucindolol. PLOS One. 2012:7(11):e48184. PMC3492337. [link](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3492337/)
15. **Kao DP**, Davis G, Aleong R, O’Connor CM, Fiuzat M, Carson PE, Anand IS, Plehn JF, Gottlieb SS, Silver MA, Lindenfeld J, Miller AB, White M, Murphy GA, Sauer W, Bristow MR. Effect of bucindolol on heart failure outcomes and heart rate response in patients with reduced ejection fraction heart failure and atrial fibrillation. Eur J Heart Fail. 2013;15(3):324-33. PMC3576901. [link](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3576901/)
16. **Kao DP**, Bucher Bartleson B, Khatri V, Dart R, Mehler PS, Katz D, Krantz MJ. Trends in reporting of methadone-associated cardiac arrhythmia events. Annals Int Med 2013; 158(10):735-740. PMC3793842. [link](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3793842/)
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92. Lowery JT, Axell L, Ku Lisa, Todd EB, **Kao D**, Rafaels N, Taylor MRG, Kudron E, Jirkowic J, Shalowitz E, Wicks S, Crooks KR. Returning actionable genetic results to participants in the biobank at the Colorado Center for Personalized Medicine and UCHealth. Genetics in Medicine Open. 2024;2:101852. [link](https://www.gimopen.org/article/S2949-7744(24)00998-1/fulltext)
93. Goldberg EM, **Kao D**, Kwan B, Patel H, Hassell A, Zane R. UCHealth’ s Virtual Health Center: How Colorado’s Largest Health system Creates and Integrates Technology into Patient Care. npj Digital Medicine. 2024;7:187. PMC11239912 [link](https://www.nature.com/articles/s41746-024-01184-8)
94. Gupta P, Brinza E, Khazanie P, Peterson PN, Ho PM, **Kao DP**. Forecasting heart failure: seasonal alignment of heart failure outcomes in New York. ESC Heart Fail. 2024. DOI: 10.1002/ehf2.14964. [link](https://onlinelibrary.wiley.com/doi/abs/10.1002/ehf2.14964)
95. DeCamp M, **Kao D**. Adaptive Machine Learning as Research: Does the Cure Fit the Disease? Am J Bioethics. 2024;24(10):70-72. [link](https://pubmed.ncbi.nlm.nih.gov/39283395/)
96. Shalowitz EL, Jhund P, Psotka M, Sharma A, Dimond M, Martyn T, Nkulikiyinka R, Fiuzat M, **Kao DP**. Where’s the remote? Failure to report clinical workflows in heart failure remote monitoring studies. J Card Fail. 2024 [in press].
97. Segar MW, Shariq Usman M, Patel K, Shahzeb Khan M, Butler J, Manjunath L, Lam C, Verma S, Willett D, **Kao D,** Januzzi J, Pandey A. Development and validation of a machine learning-based approach to identify high-risk diabetic cardiomyopathy phenotype. Eur J Heart Fail. 2024. [[ePub online](https://onlinelibrary.wiley.com/doi/10.1002/ejhf.3443)]
98. Bosic-Reiniger J, Martin JL, Brown KE, Anderson HD, Blackburn H, **Kao DP**, Trinkley KE, Woodahl EL, Aquilante CL. Barriers and facilitators of the use of clinical informatics resources to facilitate pharmacogenomic implementation in resource-limited settings. JAMIA Open. 2024;7(4):ooae101. PMC11471000 [link](https://pmc.ncbi.nlm.nih.gov/articles/PMC11471000/)
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**Book chapters**

1. **Kao D**, Daniels D, Ashley E.  Heart Failure.  In Daniels, Rockson, Vagelos (Eds.)  *Concise Cardiology* Philadelphia: Lippincott Williams & Wilkins. 2008:129-150. [link](https://books.google.com/books?id=3MljFfuGaxkC&pg=PR7&lpg=PR7&dq=Concise+Cardiology+daniels+kao&source=bl&ots=iBvgQSqb-7&sig=ACfU3U2Dq_Bn00ZDksIayKhbdeT0L-eNNg&hl=en&sa=X&ved=2ahUKEwic3uHu1qjsAhWBXM0KHfpzCFMQ6AEwEXoECAYQAg#v=onepage&q=Concise%20Cardiology%20daniels%20kao&f=false)
2. Moore PK, **Kao D**, Krantz M. Cardiovascular consequences of addiction. In el-Guebaly et al. *Textbook of Addiction Treatment: International Perspectives*: Springer-Verlag. 2014. Pages 1577-1609. [link](https://link.springer.com/referenceworkentry/10.1007/978-88-470-5322-9_78)

**Invited Presentations**

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| National |  |
| Opioid Agonists & Cardiac Safety: Pharmacovigilance & ECG Implementation. *2013 American Association for the Treatment of Opioid Dependence National Conference* 2013*.* Philadelphia, PA. [link](http://www.aatod.org/wp-content/uploads/2013/06/aatod-conference-brochure-2013.pdf) | 11/2013 |
| 1. Phenotyping HFpEF. *American Heart Association Scientific Sessions 2015*, Orlando, FL | 11/2015 |
| 1. Automation: Electronic Health Records to Coordinate Inpatient and Transitional Care. *American Heart Association Scientific Sessions 2015*, Orlando, FL | 11/2015 |
| 1. State of the Art in Data Warehousing, High Throughput Analytics, and Point-of-Care Decision Support. *American Heart Association Scientific Sessions 2015*, Orlando, FL | 11/2015 |
| The Future of EHR – Opportunities and Challenges. *American Heart Association Scientific Sessions 2015*, Orlando, FL | 11/2015 |
| Phenotyping Heart Failure with Preserved Ejection Fraction. *12th Global Cardiovascular Clinical Trialists Forum 2015,* Washington DC. | 10/2015 |
| Personalizing Heart Failure Management From Population to Gene Expression Through Applied Informatics*. Oregon Health Sciences University*, Portland, OR | 9/2015 |
| 1. Using Medical Claims Data for Precision Medicine Research, Merck Inc., North Wales, PA. | 10/2017 |
| 1. Complex phenotyping in patients with heart failure with preserved ejection fraction: understanding etiology and personalizing management – *University of Colorado Center for Women’s Health Research National Conference on Women’s Health Research*, Denver, CO | 9/2018 |
| 1. From How to Wow: Strategies to Convey Research Results. *AHA Quality of Care and Outcomes Research Scientific Sessions*, 2020 (virtual). | 5/2020 |
| 1. Accelerating Adoption: The Case for Faster AI Implementation: Pro. *AHA Quality of Care and Outcomes Research Scientific Sessions* 2020 (virtual). | 5/2020 |
| 1. Benefits and challenges using electronic medical records. *17th Global Cardiovascular Clinical Trialists Forum,* 2020 (virtual). | 12/2020 |
| 1. Ventricular Arrhythmia Associated with Synthetic and Designer Opioids. *Heart Rhythm 2022*, San Francisco, CA (virtual). | 4/2022 |
| Local |  |
| 1. Heart Failure Research in the Age of Amazon. Annual Fundraising Luncheon, Center for Women’s Health Research, University of Colorado School of Medicine, Denver, CO | 9/26/2013 |
| 1. Using Big Data to Personalize Management of Heart Failure: Finding Barney Gumble, Cardiology Research Conference, University of Colorado School of Medicine, Aurora, CO | 2/28/2015 |
| 1. Big Data in Health Care and Academic Medicine - Analytics in Decision Making – What is Happening at Anschutz? University of Colorado School of Medicine, Aurora, CO. | 10/4/2016 |
| 1. Personalized Medicine in Practice: Opportunities, Resources, and Strategies 13th Annual Women’s Health Symposium, Center for Women’s Health Research, University of Colorado School of Medicine, Aurora, CO | 4/19/2017 |
| 1. Let’s Talk: Precision Medicine – Where are we and where are we going? Center for Women’s Health Research, UCHealth, Aurora, CO | 12/1/2017 |
| 1. Personalizing Medicine at UCH: Cardiology at the Forefront, Division of Cardiology Grand Rounds, University of Colorado School of Medicine, Aurora, CO | 12/4/2017 |
| 1. Breaking Bad… Hemodynamics – Methamphetamine cardiomyopathy case presentation. Colorado Heart Failure Summit, Colorado Springs, CO | 12/13/2018 |
| 1. Let’s Talk: Precision Medicine – Where are we and where are we going? Center for Women’s Health Research, UCHealth, Aurora, CO | 2/18/2021 |
| 1. “Alexa – how do I treat HF?” Can machine learning replace the heart failure clinician? – HF management in the digital era. Colorado Heart Failure Summit, Colorado Springs, CO | 12/10/2021 |

## Peer-Reviewed Presentations, Posters & Abstracts

## Oral presentations

1. **Kao DP**, Hsich E, Lindenfeld J. Characteristics of 2067 patients hospitalized with peripartum cardiomyopathy. Annual Scientific Session & Expo of Am Coll Cardiol. J Am Coll Cardiol. 2012:59(13S):E1572 [link](https://doi.org/10.1016/S0735-1097(12)61573-3)
2. **Kao DP**, Katz DE, Bucher-Bartleson B, Mehler P, Krantz MJ. Methadone-associated ventricular arrhythmia fatalities reported to the FDA from 1969-2011. Heart Rhythm Society Scientific Sessions. Heart Rhythm 2012:9(5S):AB40-05. [link](https://doi.org/10.1016/j.hrthm.2012.03.027)
3. **Kao DP**, Lewsey JK, Massie BM, McMurray J, Carson PE, Anand IS, Lindenfeld J. Characterization of heart failure patients with preserved ejection fraction in the I-PRESERVE trial who have improved outcomes with irbesartan therapy. European Society of Cardiology Heart Failure Congress. Eur J Heart Fail. 2012;11(Suppl 1):61115. [link](https://onlinelibrary-wiley-com.proxy.hsl.ucdenver.edu/doi/pdf/10.1093/eurjhf/hss002)
4. Page RL, **Kao DP**, Macaulay D, Birnbaum H, Desai U, Lindenfeld J. Integrated telehealth and care management program reduces all-cause mortality in Medicare beneficiaries with heart failure. American Heart Association Annual Scientific Sessions. Circulation. 2012:126:A14767. [link](https://www.ahajournals.org/doi/10.1161/circ.126.suppl_21.A14767)
5. **Kao DP**, Epperson LE, Karimpour-Fard, Gilbert EM, Lowes BD, Hunter LE, Bristow MR. Transcription of Select Homeobox Genes Increases in Patients with Heart Failure-Reduced Ejection Fraction Who Have Improvements in Left Ventricular Ejection Fraction on β-blocker Therapy. American Heart Association Annual Scientific Sessions. Circulation. 2012:126:A14777. [link](https://www.ahajournals.org/doi/10.1161/circ.126.suppl_21.A14777)
6. **Kao DP**, Varosy P, Aleong R. Impact of payor status on presentation, therapies, and outcomes in 31,614 patients hospitalized with Wolff-Parkinson-White Syndrome. American Heart Association Annual Scientific Sessions. Circulation. 2012:126:A14800. [link](https://www.ahajournals.org/doi/10.1161/circ.126.suppl_21.A14800)
7. Hinterberg M, **Kao DP**, Karimpour-Fard A, Sucharov K, Hunter LE, Port JD, Bristow MR. Myocardial expression of the microRNA dre-mir-133a-5p is associated with improvement in left ventricular ejection fraction in patients with idiopathic dilated cardiomyopathy treated with β-blockers. Annual Scientific Session & Expo of Am Coll Cardiol. J Am Coll Cardiol. 2013;61(10 Suppl):E714. [link](https://doi.org/10.1016/S0735-1097(13)60714-7)
8. Krantz MJ, Traut C, **Kao DP**. Opioid Agonists & Cardiac Safety: Pharmacovigilance & ECG Implementation. American Association for the Treatment of Opioid Dependence National Conference, Nov. 11, 2013. [link](https://www.aatod.org/wp-content/uploads/2013/11/AATOD2013-FINAL-PROGRAM.pdf)
9. Epperson LE, **Kao DP**, Minobe W, Gilbert EM, Lowes BD, Bristow MR. Gene expression changes associated with β-blocker reverse remodeling in the failing human heart constitute a β1-adrenergic receptor gene regulatory network. American Heart Association Scientific Sessions. Circulation. 2013;128:A18127. [link](https://www.ahajournals.org/doi/10.1161/circ.128.suppl_22.A18127)
10. Aleong RG, Tompkins C, Varosy PD, Katz DF, Schuller JL, Nguyen D, Tzou WS, Sung RK, Sauer WH, **Kao DP**. Risk score to predict adverse events in 57,220 patients undergoing lead extraction. Heart Rhythm Society Scientific Sessions. Heart Rhythm 2015;12(5 Suppl):AB08-02. [link](https://doi.org/10.1016/j.hrthm.2015.03.049)
11. Aleong RG, Tompkins C, Varosy PD, Tzou WS, Katz DF, Schuller JL, Sung RK, Nguyen D, Sauer WH, **Kao DP**. Analysis of outcomes in 8304 patients undergoing lead extraction for infection. Heart Rhythm Society Scientific Sessions. Heart Rhythm 2015;12(5 Suppl):AB08-04. [link](https://doi.org/10.1016/j.hrthm.2015.03.049)
12. Gambahaya ET, Fana GT, **Kao DP**, Hakim JG, Matenga J. Clinical characteristics and long-term outcome of peripartum cardiomyopathy in a resource limited setting. European Society of Cardiology Heart Failure Congress. Eur J Heart Fail 2016;18(Suppl 1):628. [link](https://onlinelibrary.wiley.com/toc/18790844/18/S1)
13. Doran B, Roeder C, Merrill M, Jhund P, Stevens L, McMurray J, Görg C, **Kao DP**. Latent cluster analysis using clinical and functional characteristics identifies novel phenotypes of patients with reduced ejection fraction enrolled in the HF-ACTION trial with differential association with mortality. American Heart Association Scientific Sessions. Circulation 2018;138(Suppl 1):A12890. [link](https://www.ahajournals.org/doi/10.1161/circ.138.suppl_1.12890)
14. Riordan M, **Kao DP**. Clinical phenotype differences in outcomes and responses in spironolactone in heart failure with preserved ejection fraction. Circulation. 2020;142:15229. [link](https://www.ahajournals.org/doi/10.1161/circ.142.suppl_3.15229)
15. Shalowitz E, **Kao DP**. Non-invasive telemonitoring programs in chronic heart failure patients: how differences in alert criteria affect all-cause mortality outcomes. Accepted for presentation at European Society of Cardiology Heart Failure Congress, May 21-24 2022.[link](https://esc365.escardio.org/presentation/248245)
16. **Kao D**, Reusch J, Regensteiner J. Sex differences in reporting of statin-associated diabetes mellitus – a pharmacovigilance analysis of US drug safety data. American Heart Association Scientific Sessions. Nov 11-13, 2023, Philadelphia, PA. [link](https://www.ahajournals.org/doi/10.1161/circ.148.suppl_1.18525)
17. Brinza EK, **Kao DP**. Comparative seasonal variation in outcomes among patients hospitalized for heart failure in cold- and warm-climate states. American Heart Association Scientific Sessions, Nov 11-13, 2023. Circulation. 2023;148(suppl\_1):18447. [link](https://www.ahajournals.org/doi/10.1161/circ.148.suppl_1.18447)

## Poster presentations

1. **Kao DP**, Pavlovic A, Fowler MB, Das AK. The Heart Failure Origin & Ontology Task (HOOT) Project. AMIA Summit on Translational Bioinformatics, March 12-15, 2008, San Francisco, CA.
2. Telli ML, Yoon G, **Kao D**, Matsuda K, Witteles RM. Left ventricular dysfunction in patients receiving cardiotoxic cancer therapies: Are clinicians responding appropriately? Poster presentation at 58th Annual Scientific Meeting of the American College of Cardiology, March 29-31, Orlando, FL. J Am Coll Cardiol 2009;53(10 Suppl 1):A144-A197. [link](https://doi.org/10.1016/j.jacc.2009.01.015)
3. **Kao DP**, Kreso E, Fonarow G, Krantz M. Anemia, Kidney Disease, and Inpatient Outcomes for Heart Failure in California 2000-2006. 13th Annual Scientific Meeting of the Heart Failure Society of America, Sept 13-16, 2009; Boston, MA. J Card Fail 2009:15(6S):S102-3. [link](https://www.sciencedirect.com/science/article/pii/S107191640900551X?via%3Dihub)
4. **Kao DP**, Raff H, Peterson P. Gender Differences in Use of Implantable Cardiac Defibrillators and Resynchronization Therapy for Heart Failure in California, 2000-2006. 13th Annual Scientific Meeting of the Heart Failure Society of America, Sept 13-16, 2009; Boston, MA. J Card Fail 2009:15(6S):S79-80. [link](doi:https://doi.org/10.1016/j.cardfail.2009.06.140)
5. Heath R, **Kao DP**, Belardi D, and Varosy PD. Mortality and Complication Rates of Catheter-based Ablation Procedures Are Lower at High Volume Centers. Heart Rhythm 2010;7(5, Supplement 1):PO1-56. [link](https://reader.elsevier.com/reader/sd/pii/S1547527110002717?token=E77EBAEA400AE249A718C40AE647DBC244CD10CFA67490E08BE35ED718987DF6457CF3EFED0B804143C390ECA1D4C040&originRegion=us-east-1&originCreation=20220429190032)
6. Tipney H, **Kao DP**, Bristow MR, Hunter LE, Lowes BD. Knowledge-based analysis implicates hypoxia in beta-blocker response. Translational Bioinformatics Summit, March 7-9, 2011, San Francisco, CA.
7. Perez MV, Pavlovic A, Wheeler MT, Dewey FE, Bernstein B, Robbins RC, Fowler MB, Quertermous T, Absher D, Ho M, Cretti E, Southwick A, Rosenthal D, Myers RM, Heidenreich P, Garrett L, Sedehi D, **Kao D**, Salisbury H, Chan K, Ashley E. Genetic Determinants of Dramatic Improvement in Left Ventricular Function in Patients with Heart Failure. Annual Scientific Session & Expo of Am Coll Cardiol, April 2-5, 2011, New Orleans, LA. J Am Coll Cardiol 2011;57(14S):A167. [link](https://doi.org/10.1016/S0735-1097(11)62041-X)
8. Dattilo PB, **Kao DP**, Messenger JC, Casserly IP. Packed Red Blood Cell Transfusion is Associated with Adverse Outcomes in Patients Undergoing Endovascular Therapy of Peripheral Arterial Disease. Annual Scientific Session & Expo of Am Coll Cardiol, April 2-5, 2011, New Orleans, LA. J Am Coll Cardiol 2011;57(14S):E1493. [link](https://doi.org/10.1016/S0735-1097(11)61493-9)
9. **Kao DP**, Kreso E. Gender and Racial Differences in Demographics and Outcomes in 800 Inpatient Admissions for Takotsubo Cardiomyopathy. Annual Scientific Session & Expo of Am Coll Cardiol, April 2-5, 2011, New Orleans, LA. J Am Coll Cardiol 2011;57(14S):E264. [link](https://doi.org/10.1016/S0735-1097(11)60264-7)
10. **Kao DP**, Wagner BD, Roberston AD, Kittelson JM, Bristow MR, Lowes BD. High-dimensional clinical phenotype analysis predicts mortality and response to beta-blocker therapy in nonischemic heart failure. Annual Scientific Session & Expo of Am Coll Cardiol, April 2-5, 2011, New Orleans, LA. J Am Coll Cardiol. 2011;57(14S):E1266. [link](https://doi.org/10.1016/S0735-1097(11)61266-7)
11. Brieke A, **Kao DP**, Zolty R, Gilbert EM, Robertson AD, Bristow MR, Lowes BD. Transcriptional profiles of ventricular ectopy on β-blocker therapy. J Card Fail 2011;17(8S):S35-46. [link](https://www.onlinejcf.com/article/S1071-9164(11)00373-3/fulltext)
12. Simmons RP and **Kao DP**. Characteristics and short-term outcomes of necrotising fasciitis. Infectious Disease Society of America Annual Meeting Oct 20-23, 2011, Boston, MA.
13. **Kao DP**, Tipney H, Gilbert EM, Lowes BD, and Bristow MR. Uncoupling of myocardial response to hypoxia in nonischemic heart failure is associated with intraventricular conduction disease and reduced response to beta-blockers. Circulation 2011;124(21 Supplement):A16844. [link](https://www.ahajournals.org/doi/10.1161/circ.124.suppl_21.A16844)
14. **Kao DP**, Zolty R, Gilbert EM, Lowes BD, Bristow MR. Myocardial gene expression associated with right- and left-ventricular remodeling with β-blockade in idiopathic dilated cardiomyopathy. Heart Failure Society of American Annual Scientific Sessions, September 11, 2012. J Card Fail 2012;18(8S):S33-34. [link](https://doi.org/10.1016/j.cardfail.2012.06.116)
15. **Kao DP**, Davis GW, Aleong RG, Sauer WH, Bristow MR. Effect of Bucindolol on Heart Failure Outcomes and Ventricular Response Rate in HFREF Patients with Permanent Atrial Fibrillation. Heart Failure Society of American Annual Scientific Sessions, September 10, 2012. J Card Fail 2012;18(8S):S50-51. [link](https://doi.org/10.1016/j.cardfail.2012.06.173)
16. **Kao DP**, Epperson LE, Karimpour-Fard A, Gilbert EM, Lowes BD, Hunter LE, Bristow MR. Changes in expression of cholesteryl ester transfer protein (CETP) are correlated with improvement in left ventricular function in patients with heart failure and reduced ejection fraction who respond to β-blocker therapy. American Heart Association Annual Scientific Sessions Nov. 5, 2012. Circulation 2012;126(11 Suppl 1):A14639. [link](https://www.ahajournals.org/doi/10.1161/circ.126.suppl_21.A14639)
17. **Kao DP**, Haigney MC, Mehler PS, Krantz MJ. Is buprenorphine safer than methadone? Analysis of Disproportionate Reporting of Ventricular Arrhythmia to the FDA. Heart Rhythm Society 2013. Heart Rhythm 2013;10(5 suppl):PO02-46. [link](https://www.sciencedirect.com/science/article/pii/S1547527113002889)
18. **Kao DP**, McIlvennan CK, Page RL, Lindenfeld J. Impact of day, month, and hour of admission on inpatient outcomes in 949,907 hospitalizations for congestive heart failure. European Society of Cardiology Heart Failure Congress 2013. Eur J Heat Fail 2013;12(suppl 1):S189:P1230. [link](https://onlinelibrary.wiley.com/doi/abs/10.1093/eurjhf/hst009)
19. **Kao DP**, Epperson LE, Karimpour-Fard A, Gilbert EM, Lowes BD, Hunter LE, Bristow MR. Expression levels of select mRNA triads are predictive of response to beta-blocker therapy in patients with reduced ejection fraction heart failure. European Society of Cardiology Heart Failure Congress 2013. Eur J Heart Fail 2013;12(suppl 1):S26. [link](https://onlinelibrary.wiley.com/doi/pdf/10.1093/eurjhf/hst007)
20. Perez MV, Pavlovic A, Wheeler MT, Dewey FE, Pan S, Absher D, Cretti E, Southwick A, Heidenreich P, Sedehi D, Brandimarto J, **Kao DP**, Salisbury H, Chan K, Rosenthal D, Bernstein D, Fowler MB, Robbins RC, Myers RM, Quertermous T, Cappola T, Ashley E. Genetic variation near the HCRTR2 associated with dramatic improvement of heart function in patients with heart failure. Circulation 2013;128(Suppl 22):A519. [link](https://www.ahajournals.org/doi/10.1161/circ.128.suppl_22.A16018)
21. **Kao DP**, Epperson LE, Meyer L, Ferguson D, Zolty R, Weller JD, Gilbert EM, Lowes BD, Bristow MR. Serial gene expression changes associated with reverse remodeling in dilated cardiomyopathies: results of the effects of beta-blockers on remodeling and gene expression in the failing human heart (BORG) Trial. American Heart Association Annual Scientific Sessions. Circulation 2013;128(Suppl 22):A17977. [link](https://www.ahajournals.org/doi/10.1161/circ.128.suppl_22.A17977)
22. **Kao DP**, Varosy P, Nguyen DT, Tzou W, Katz D, Schuller J, Sung R, Steckman D, Sauer WH, Aleong R. Temporal trends in mortality and adverse events in 24,890 patients undergoing lead extraction over a decade. American Heart Association Annual Scientific Sessions.Circulation 2013;128(Suppl 22):A16352. [link](https://www.ahajournals.org/doi/10.1161/circ.128.suppl_22.A16352)
23. **Kao DP**, Varosy P, Nguyen DT, Tzou W, Katz D, Schuller J, Sung R, Steckman D, Sauer WH, Aleong R. Predictors of adverse events in 24,890 patients undergoing lead extraction. American Heart Association Annual Scientific Sessions, Nov. Circulation 2013;128(Suppl 22):A16362. [link](https://www.ahajournals.org/doi/10.1161/circ.128.suppl_22.A16362)
24. Port JD, Karimpour-Fard A, **Kao D**, Hinterberg MA, Sucharov C, Hunter LE, and Bristow MR**.** Myocardial microRNA expression is a predictor of response to beta-blocker therapy in patients with nonischemic dilated cardiomyopathy. Cold Spring Harbor Laboratory Meeting. Precision Medicine: Personal Genomes & Pharmacogenomics, Abstracts, pg 69, 2013.
25. Bristow MR, Gilbert EM, Lowes BD, Minobe W, **Kao DP**. Recovery lessons from β-adrenergic receptor blockade. Utah-Cardiac Recovery Symposium 2013.
26. McIlvennan CK, Lindenfeld J, **Kao DP**. Sex differences in characteristics and in-hospital outcomes in patients undergoing mechanical circulatory support implantation, 1995-2011. J Am Coll Cardiol 2014;63(12 Suppl):A814. [link](https://doi.org/10.1016/S0735-1097(14)60814-7)
27. **Kao DP**, Minobe W, Epperson LEE, Meyer L, Ferguson D, Zolty R, Gilbert EM, Lowes BD, Bristow MR. Comparison of changes in reverse remodeling associated myocardial gene expression between carvedilol and metoprolol in nonischemic dilated cardiomyopathy. European Society of Cardiology Heart Failure Congress. Eur J Heart Fail 2014;16(Suppl 2):P1794. [link](https://onlinelibrary.wiley.com/doi/pdf/10.1002/ejhf.93_21)
28. **Kao DP**, McIlvennan CK, Nenaber AM, Jones MA, Larchick L, Chenoweth C, Douglas S, Pell J, Prutzman L, Allen LA. Derivation and implementation of data-driven electronic medical record criteria for identifying likely heart failure patients at the time of hospitalization. European Society of Cardiology Heart Failure Congress. Eur J Heart Fail 2014;16(Suppl 2):P727. [link](https://onlinelibrary.wiley.com/doi/pdf/10.1002/ejhf.93_13)
29. **Kao DP**. Seasonal variation in inpatient mortality among 949,907 heart failure patients is driven by variation in temperature but not air pollution indicators. European Society of Cardiology Heart Failure Congress. Eur J Heart Fail 2014;16(Suppl 2):P1731. [link](https://onlinelibrary.wiley.com/doi/pdf/10.1002/ejhf.93_21)
30. **Kao DP**, Minobe W, Jones KL, Zolty R, Gilbert EM, Lowes BD, Bristow MR. RNA sequencing, microarray hybridization, and quantitative PCR produce complementary results in longitudinal analysis of myocardial gene expression in dilated cardiomyopathy patients. J Card Fail 2014:20(8S):S82. [link](https://doi.org/10.1016/j.cardfail.2014.06.233)
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