**Cluster 0: Developmental genomics**

Centroids: 'gene', 'expression', 'genes', 'gene expression', 'human', 'genome', 'molecular', 'disease', 'cell', 'functional', 'networks', 'aim', 'regulation', 'models', 'biology'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Computational Methods for Expression Image Analysis | ARIZONA STATE UNIVERSITY-TEMPE CAMPUS | R01 | 2013 | 0.075 |
| Translational Bioinformatics for Human Developmental Genomics | TUFTS UNIVERSITY MEDFORD | R01 | 2012 | 0.068 |
| Integrated SNP, gene expression and proteomic analysis | EPICENTER SOFTWARE | R44 | 2005 | 0.066 |
| Deciphering cellular signaling system by deep mining a comprehensive genomic compendium | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2018 | 0.062 |
| The Molecular Pathogenesis of Health Disparities in Inf\* | NORTHSHORE UNIVERSITY HEALTHSYSTEM | R01 | 2005 | 0.062 |

**Cluster 1: Pediatrics**

Centroids: 'children', 'pediatric', 'early', 'age', 'developmental', 'development', 'child', 'outcomes', 'risk', 'study', 'infants', 'childhood', 'language', 'school', 'year'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Multi-Site Validation Study of the HLHS Arrest Predictor | BAYLOR COLLEGE OF MEDICINE | R01 | 2020 | 0.14 |
| Development of clinical decision tools for management of diarrhea of children in high and low resource settings | UNIVERSITY OF UTAH | R01 | 2020 | 0.13 |
| PREDICTING OUTCOME IN CHILDREN WITH NEW-ONSET TICS USING NEUROIMAGING DATA | WASHINGTON UNIVERSITY | R21 | 2016 | 0.13 |
| The development of fluent and automatic reading | UNIVERSITY OF GEORGIA (UGA) | R01 | 2005 | 0.11 |
| THE DEVELOPMENT OF FLUENT AND AUTOMATIC READING | UNIVERSITY OF GEORGIA (UGA) | R01 | 2000 | 0.11 |

**Cluster 2: Non-descript**

Centroids: 'treatment', 'brain', 'imaging', 'substance', 'biomarkers', 'disease', 'substance use', 'disorders', 'disorder', 'neuroimaging', 'opioid', 'study', 'patients', 'aim', 'identify'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Missing Data Matters: Substance Use Disorder Clinical Trials | JOHNS HOPKINS UNIVERSITY | R01 | 2020 | 0.021 |
| Biosignatures of Treatment Remission in Major Depression | COLUMBIA UNIVERSITY HEALTH SCIENCES | U01 | 2015 | 0.019 |
| ABCD-USA Consortium: Research Project | UNIVERSITY OF CALIFORNIA, SAN DIEGO | U01 | 2019 | 0.018 |
| Telemedicine for Treatment of Opioid Use Disorder | HARVARD MEDICAL SCHOOL | R01 | 2020 | 0.012 |
| Diagnostic and prognostic biomarkers for subtypes of addiction-related circuit dysfunction | WEILL MEDICAL COLL OF CORNELL UNIV | R01 | 2020 | 0.011 |

**Cluster 3: Non-descript**

Centroids: 'care', 'patients', 'patient', 'outcomes', 'treatment', 'quality', 'hospital', 'electronic', 'improve', 'medical', 'risk', 'acute', 'ehr', 'healthcare', 'health care'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Identifying palliative care needs among hospitalized patients with chronic obstructive pulmonary disease | UNIVERSITY OF PENNSYLVANIA | K23 | 2020 | 0.067 |
| Improving Hospital Efficiency: Predicting Post-Acute Care Facility Placement Using Machine Learning and Patient Mobility Scores from the Electronic Medical Record | JOHNS HOPKINS UNIVERSITY | R03 | 2020 | 0.054 |
| Continuous-Signal Driven Predictive Models in Neurological Intensive Care Units | UNIVERSITY OF CALIFORNIA LOS ANGELES | R01 | 2012 | 0.052 |
| Improving the measurement and analysis of long-term, patient-centered outcomes following acute respiratory failure | UNIVERSITY OF PENNSYLVANIA | R00 | 2020 | 0.051 |
| Autonomous diagnosis and management of the critically ill during air transport (ADMIT) | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2020 | 0.045 |

**Cluster 4: Pain management**

Centroids: 'pain', 'chronic', 'treatment', 'patients', 'opioid', 'brain', 'care', 'management', 'treatments', 'low', 'effects', 'patient', 'self', 'assessment', 'mechanisms'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Measuring Infant Pain Objectively using Sensor Fusion and Machine Learning Algorithms | AUTONOMOUS HEALTHCARE, INC. | R41 | 2018 | 0.41 |
| Central glutamate signaling in postoperative pain regulation - Renewal | NEW YORK UNIVERSITY SCHOOL OF MEDICINE | R01 | 2020 | 0.4 |
| A Multimodal Approach for Monitoring Prolonged Acute Pain in Neonates | UNIVERSITY OF SOUTH FLORIDA | R21 | 2020 | 0.4 |
| Evaluation of Pain in Chronic Pancreatitis using the NAPS2 cohorts | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R21 | 2015 | 0.39 |
| Finding Good TEMporal PostOperative pain Signatures (TEMPOS) | UNIVERSITY OF FLORIDA | R01 | 2019 | 0.39 |

**Cluster 5: Single-cell analysis**

Centroids: 'cell', 'cells', 'single cell', 'single', 'cellular', 'cell types', 'types', 'human', 'tissue', 'analysis', 'molecular', 'signaling', 'disease', 'immune', 'aim'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Dissecting the mechanism of cell migration at the systems level | CARNEGIE-MELLON UNIVERSITY | R35 | 2020 | 0.13 |
| Single-cell multi-protein device for informative cellular function evaluation | ISOPLEXIS, INC. | R43 | 2016 | 0.11 |
| In situ transcriptome profiling in single cells | CALIFORNIA INSTITUTE OF TECHNOLOGY | UH3 | 2020 | 0.11 |
| Defining cell types, lineage, and connectivity in developing human fetal cortex | UNIVERSITY OF CALIFORNIA LOS ANGELES | U01 | 2016 | 0.11 |
| Understanding the control mechanisms of 3D cell migration from new dimensions | OREGON STATE UNIVERSITY | R35 | 2020 | 0.11 |

**Cluster 6: Positron emission tomography (PET)**

Centroids: 'pet', 'radiation', 'ct', 'planning', 'imaging', 'dose', 'treatment', 'image', 'therapy', 'cancer', 'patient', 'mri', 'tumor', 'tumors', 'mr'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Quantitative Low-Dose PET Imaging | YALE UNIVERSITY | R01 | 2020 | 0.16 |
| Optimization of PET Image Reconstruction for Lesion Detection | MASSACHUSETTS GENERAL HOSPITAL | R03 | 2020 | 0.12 |
| Integration of endoscopic and CT data for radiation therapy treatment planning | UNIV OF NORTH CAROLINA CHAPEL HILL | R01 | 2018 | 0.11 |
| Novel Algorithms for Reducing Radiation Dose of CT Perfusion | HURA IMAGING, INC | R44 | 2020 | 0.11 |
| Dissemination of a Software Platform for Efficient CT Radiation Dose Optimization and Diagnostic Performance Assessment | MAYO CLINIC ROCHESTER | U24 | 2020 | 0.11 |

**Cluster 7: Dementia**

Centroids: 'ad', 'alzheimer', 'alzheimer disease', 'disease', 'dementia', 'cognitive', 'brain', 'risk', 'aging', 'imaging', 'biomarkers', 'pathology', 'early', 'mri', 'trials'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Computational Prediction and Functional Validation of Novel Risk Loci of Alzheimer's Disease | EMORY UNIVERSITY | R56 | 2018 | 0.31 |
| Disparities in the Diagnosis of Alzheimer's Disease Among African American and European American Veterans | SEATTLE INST FOR BIOMEDICAL/CLINICAL RES | R56 | 2018 | 0.3 |
| Assessing ASL CBF as a biomarker for early Alzheimer's disease detection and disease progression | UNIVERSITY OF MARYLAND BALTIMORE | R01 | 2020 | 0.29 |
| Manifold-valued statistical models for longitudinal morphometic analysis in preclinical Alzheimer's disease (AD) | UNIVERSITY OF WISCONSIN-MADISON | R01 | 2018 | 0.28 |
| Computational Prediction and Functional Validation of Novel Epigenetic Risk Loci in Alzheimer's Disease | EMORY UNIVERSITY | R56 | 2018 | 0.27 |

**Cluster 8: Single neuron analysis**

Centroids: 'neurons', 'neuronal', 'activity', 'cortical', 'cortex', 'neural', 'dynamics', 'circuits', 'brain', 'sensory', 'behavioral', 'responses', 'cell', 'behavior', 'circuit'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Experimental examinations of the mechanisms that generate the responses of midbra | HARVARD UNIVERSITY | R01 | 2017 | 0.14 |
| Crowd coding in the brain:3D imaging and control of collective neuronal dynamics | UNIV OF MARYLAND, COLLEGE PARK | U01 | 2016 | 0.12 |
| Exocytosis fuels plasma membrane expansion in developing neurons | UNIV OF NORTH CAROLINA CHAPEL HILL | R01 | 2020 | 0.12 |
| "Methods from Computational Topology and Geometry for Analysing Neuronal Tree and Graph Data" | COLD SPRING HARBOR LABORATORY | R01 | 2018 | 0.11 |
| Corticofugal Modulation of Tactile Sensory Processing | DUKE UNIVERSITY | R01 | 2005 | 0.1 |

**Cluster 9: Non-descript**

Centroids: 'methods', 'analysis', 'disease', 'computational', 'tools', 'models', 'software', 'biological', 'statistical', 'human', 'genomic', 'model', 'diseases', 'genome', 'large'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Markov Chain Monte Carlo and Exact Logistic Regression | CYTEL, INC | R44 | 2004 | 0.0097 |
| STATISTICAL METHODS FOR RECURSIVELY PARTITIONED TREES | BARNES-JEWISH HOSPITAL | R01 | 2002 | 0.0082 |
| Inference in Regression Models with Missing Covariates | UNIVERSITY OF NORTH CAROLINA CHAPEL HILL | R01 | 2003 | 0.0077 |
| COINSTAC: Decentralized, Scalable Analysis of Loosely Coupled Data | GEORGIA STATE UNIVERSITY | R01 | 2019 | 0.0057 |
| SELECTING AMONG MATHEMATICAL MODELS OF COGNITION | OHIO STATE UNIVERSITY | R01 | 2000 | 0.0047 |

**Cluster 10: Computer aided detection (CAD)**

Centroids: 'image', 'images', 'cad', 'imaging', 'detection', 'analysis', 'computer', 'image analysis', 'lesions', 'software', 'diagnosis', 'algorithms', 'cancer', 'digital', 'medical'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Digital Mammography: Advanced Computer-Aided Breast Can\* | UNIVERSITY OF MICHIGAN | R01 | 2007 | 0.089 |
| Multimodal image registration by proxy image synthesis | JOHNS HOPKINS UNIVERSITY | R01 | 2015 | 0.079 |
| Development and Dissemination of MuscleMiner: An Imaging Informatics Tool for Mus | UNIVERSITY OF FLORIDA | R01 | 2018 | 0.077 |
| Development and Dissemination of MuscleMiner: An Imaging Informatics System for Muscle | UNIVERSITY OF FLORIDA | R01 | 2016 | 0.077 |
| Computer analysis of optic disc images in glaucoma | UNIVERSITY OF PENNSYLVANIA | R01 | 2011 | 0.072 |

**Cluster 11: Suicidality**

Centroids: 'suicide', 'risk', 'behavior', 'factors', 'opioid', 'risk factors', 'death', 'study', 'prediction', 'prevention', 'youth', 'adolescents', 'patients', 'care', 'ehr'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Predicting Self-Harm, Suicide Attempt, and Suicidal Death using Longitudinal EHR, Claims and Mortality Data | WEILL MEDICAL COLL OF CORNELL UNIV | R01 | 2020 | 0.4 |
| Prediction of suicide death using EHR and polygenic risk scores | UNIVERSITY OF UTAH | R01 | 2020 | 0.38 |
| Innovations in Suicide Prevention Research (INSPIRE) | UNIV OF NORTH CAROLINA CHAPEL HILL | R01 | 2020 | 0.38 |
| Improving Suicide Prediction using NLP-Extracted Social Determinants of Health | UNIVERSITY OF MASSACHUSETTS LOWELL | R01 | 2020 | 0.38 |
| Digital Monitoring of Agitation for Short-Term Suicide Risk Prediction | MASSACHUSETTS GENERAL HOSPITAL | K23 | 2020 | 0.38 |

**Cluster 12: Non-descript**

Centroids: 'risk', 'patients', 'factors', 'risk factors', 'prediction', 'screening', 'heart', 'study', 'disease', 'treatment', 'high risk', 'identify', 'care', 'patient', 'early'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Harnessing the Electronic Health Record to Predict Risk of Cardiovascular Disease | MAYO CLINIC ROCHESTER | R01 | 2020 | 0.061 |
| Prediction of short-term risk of coronary heart disease and overall risk of ischemic cardiomyopathy | STANFORD UNIVERSITY | F32 | 2018 | 0.059 |
| Improving the Accuracy of ASCVD Risk Estimation Using Population-Level EHR and Genetic Data | BROWN UNIVERSITY | F30 | 2020 | 0.057 |
| Geometric Surrogates for Clinical Management of Abdominal Aortic Aneurysms | UNIVERSITY OF TEXAS SAN ANTONIO | R01 | 2018 | 0.05 |
| A New Hip Fracture Risk Prediction Tool Based on Common Predictors and Hip Geomer | UNIVERSITY OF ARIZONA | R21 | 2012 | 0.05 |

**Cluster 13: Cancer genomics**

Centroids: 'cancer', 'prostate', 'tumor', 'cancers', 'patients', 'treatment', 'cell', 'analysis', 'methods', 'patient', 'mutations', 'biomarkers', 'genomic', 'tumors', 'computational'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Visualization and Analysis of the TCGA Data Using the UCSC Cancer Genomics Browse | UNIVERSITY OF CALIFORNIA SANTA CRUZ | R21 | 2009 | 0.093 |
| Gene-Gene Interactions and Their Functional Roles in Prostate Cancer Aggressiveness | LSU HEALTH SCIENCES CENTER | R21 | 2017 | 0.084 |
| MICRORNA BIOMARKERS FOR OROPHARYNGEAL CANCER | UNIVERSITY OF ILLINOIS AT CHICAGO | R01 | 2020 | 0.08 |
| A Federated Galaxy for user-friendly large-scale cancer genomics research | OREGON HEALTH & SCIENCE UNIVERSITY | U24 | 2020 | 0.079 |
| Stephenson Cancer Center - Cancer Center Support Grant | UNIVERSITY OF OKLAHOMA HLTH SCIENCES CTR | P30 | 2020 | 0.076 |

**Cluster 14: Epigenetics**

Centroids: 'methylation', 'dna', 'epigenetic', 'gene', 'expression', 'gene expression', 'patterns', 'cell', 'sequencing', 'genes', 'genome', 'human', 'disease', 'cancer', 'sequence'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Identification of epigenetic subclones in lymphomas and leukemias | WASHINGTON UNIVERSITY | F30 | 2020 | 0.24 |
| Signals of Epigenetic Modification in Sjogrens Syndrome | UNIVERSITY OF CALIFORNIA BERKELEY | F31 | 2018 | 0.24 |
| Defining Genomic Signatures for Aberrant DNA Methylation in Human Cancers | EMORY UNIVERSITY | R01 | 2013 | 0.23 |
| MODELING DNA METHYLATION'S ROLE IN GENE REGULATION | WASHINGTON UNIVERSITY | R01 | 2018 | 0.23 |
| Statistical Models in Epigenomics | UNIVERSITY OF SOUTHERN CALIFORNIA | R01 | 2005 | 0.2 |

**Cluster 15: Protein structure analysis**

Centroids: 'cell', 'cells', 'single cell', 'single', 'cellular', 'cell types', 'types', 'human', 'tissue', 'analysis', 'molecular', 'signaling', 'disease', 'immune', 'aim'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Advanced approaches to protein structure prediction | UNIVERSITY OF MICHIGAN AT ANN ARBOR | R35 | 2020 | 0.2 |
| Integrated Prediction of Protein Struture at 1D, 2D and 3D Levels | UNIVERSITY OF MISSOURI-COLUMBIA | R01 | 2013 | 0.2 |
| Distance-based ab initio protein structure prediction | UNIVERSITY OF MISSOURI-COLUMBIA | R01 | 2020 | 0.19 |
| Very large datasets and new models to predict and design protein interactions | MASSACHUSETTS INSTITUTE OF TECHNOLOGY | R01 | 2014 | 0.18 |
| Mining the Structural Genomics Pipeline | YALE UNIVERSITY | F32 | 2006 | 0.17 |

**Cluster 16: Speech disorders**

Centroids: 'speech', 'language', 'motor', 'neural', 'communication', 'measures', 'time', 'real', 'model', 'real time', 'human', 'disorders', 'brain', 'control', 'normal'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Speech Prosody and Articulatory Dynamics in Spoken Language | UNIVERSITY OF SOUTHERN CALIFORNIA | R01 | 2016 | 0.35 |
| Wearable silent speech technology to enhance impaired oral communication | UNIVERSITY OF TEXAS, AUSTIN | R01 | 2020 | 0.33 |
| Objectively Quantifying Speech Outcomes of Children with Cleft Palate | ARIZONA STATE UNIVERSITY-TEMPE CAMPUS | R21 | 2019 | 0.32 |
| Multimodal Speech Translation for Assistive Communication | NORTHEASTERN UNIVERSITY | R21 | 2015 | 0.32 |
| Perception of dysarthric speech: An objective model of dysarthric speech evaluation with actionable outcomes | ARIZONA STATE UNIVERSITY-TEMPE CAMPUS | R01 | 2020 | 0.31 |

**Cluster 17: HIV**

Centroids: 'hiv', 'infection', 'risk', 'prevention', 'social', 'associated', 'study', 'care', 'patients', 'therapy', 'cells', 'brain', 'treatment', 'individuals', 'behaviors'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Big Data analytics of HIV treatment gaps in South Carolina: Identification and prediction | UNIVERSITY OF SOUTH CAROLINA AT COLUMBIA | R01 | 2020 | 0.36 |
| Addressing Major HIV Prevention and Health Outcomes Questions in an Era of Universal ART: Mentoring in a Community-Randomized Trial | BRIGHAM AND WOMEN'S HOSPITAL | K24 | 2020 | 0.35 |
| Health Informatics to Model the Scott County HIV Outbreak | UNIVERSITY OF GEORGIA | R21 | 2020 | 0.35 |
| Big Data Analysis of HIV Risk and Epidemiology in Sub-Saharan Africa | STANFORD UNIVERSITY | R01 | 2020 | 0.34 |
| Quantitative diagnosis of TB/HIV co-infection using pathogen-specific exosomes in blood | ARIZONA STATE UNIVERSITY-TEMPE CAMPUS | R03 | 2018 | 0.34 |

**Cluster 18: Non-descript**

Centroids: 'surgical', 'phase', 'device', 'surgery', 'time', 'monitoring', 'real', 'technology', 'patients', 'real time', 'devices', 'patient', 'detection', 'phase ii', 'ii'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Intraocular Robotic Interventional Surgical System for Cataract Surgery Project | UNIVERSITY OF CALIFORNIA LOS ANGELES | R21 | 2015 | 0.042 |
| Quantifying the Metrics of Surgical Mastery: An Exploration in Data Science | STANFORD UNIVERSITY | R01 | 2020 | 0.032 |
| Real-time non-intrusive workload monitoring-Integration of human factors in surgery training and assessment | PURDUE UNIVERSITY | R21 | 2020 | 0.032 |
| A Laser-Based Device for Work Site Stability Assessment | AAC INTERNATIONAL | R44 | 2007 | 0.029 |
| Automatic Counting System for Items Used in Surgery | ROBOTIC SURGICAL TECH, INC. | R43 | 2004 | 0.027 |

**Cluster 19: Research career programs**

Centroids: 'dr', 'training', 'career', 'disease', 'patients', 'independent', 'award', 'development', 'risk', 'candidate', 'career development', 'program', 'university', 'investigator', 'skills'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Understanding Functional Connectivity Abnormalities In Individual Patients with Psychosis | MASSACHUSETTS GENERAL HOSPITAL | K01 | 2020 | 0.11 |
| Avoidable Acute Care Use among Patients with Lupus | BRIGHAM AND WOMEN'S HOSPITAL | K23 | 2020 | 0.1 |
| Multimodal Biomarkers in Frontotemporal Lobar Degeneration | UNIVERSITY OF PENNSYLVANIA | K01 | 2017 | 0.098 |
| Improving Prediction of Medical Responsiveness and Clinical Outcomes in Crohn's Disease | UNIVERSITY OF MICHIGAN AT ANN ARBOR | K23 | 2019 | 0.097 |
| Understanding and predicting cardiac events in HD using real-time EHRs | DUKE UNIVERSITY | K25 | 2017 | 0.096 |

**Cluster 20: Abstract unavailable**

Centroids: 'abstract', 'available', 'adverse', 'effects', 'events', 'structure', 'analysis', 'foundation', 'model', 'signaling', 'network', 'response', 'center', 'discover', 'associated'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| MACE - Michigan Alliance for Cheminformatic Exploration | UNIVERSITY OF MICHIGAN | P20 | 2007 | 0.17 |
| Computerized Radiographic Analysis of Bone Structure | UNIVERSITY OF CHICAGO | R01 | 2005 | 0.17 |
| FOUNDATION MODEL OF ANATOMY | UNIVERSITY OF WASHINGTON | R01 | 2002 | 0.15 |
| VOICE RESPONSE/INTERNET REGISTRATION & RANDOMIZATION | RHO FEDERAL SYSTEMS DIVISION, INC. | R44 | 2002 | 0.13 |
| INTELLIGENT CRITIQUING OF CLINICAL-GUIDELINE APPLICATION | STANFORD UNIVERSITY | R01 | 2000 | 0.13 |

**Cluster 21: Clinical decision support**

Centroids: 'decision', 'decision support', 'decision making', 'support', 'making', 'patient', 'patients', 'systems', 'care', 'time', 'medical', 'real', 'tool', 'cancer', 'real time'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Decision Support in the Care of Preterm Newborns-Tool Development | MEDICAL UNIVERSITY OF SOUTH CAROLINA | R21 | 2009 | 0.11 |
| Measuring real time decision-making about UVR Protection | SLOAN-KETTERING INST CAN RESEARCH | R21 | 2010 | 0.11 |
| Data-Mining Clinical Decision Support from Electronic Health Records | STANFORD UNIVERSITY | K01 | 2019 | 0.11 |
| Design and Evaluation of a Decision Support Engine for Advanced Treatment of Type 1 Diabetes | OREGON HEALTH & SCIENCE UNIVERSITY | F31 | 2020 | 0.088 |
| DECISION SUPPORT SOFTWARE TO TRIAGE FOR SKIN CANCER | WEST PORTAL SOFTWARE CORPORATION | R44 | 2000 | 0.088 |

**Cluster 22: Functional MRI**

Centroids: 'brain', 'fmri', 'imaging', 'connectivity', 'functional', 'human', 'analysis', 'methods', 'activity', 'eeg', 'neural', 'mri', 'neuroimaging', 'development', 'cognitive'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Longitudinal brain development and clinical outcomes in ADHD from 7-17 years | OREGON HEALTH & SCIENCE UNIVERSITY | R56 | 2016 | 0.098 |
| Enabling Shared Analysis and Processing of Large Neurophysiology Data | KITWARE, INC. | R44 | 2018 | 0.088 |
| Bayesian Methods for Localizing Dynamic Brain Activity and Epileptogenic Zones | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | F32 | 2011 | 0.079 |
| Development and Dissemination of Robust Brain MRI Measurement Tools | UNIV OF NORTH CAROLINA CHAPEL HILL | R01 | 2015 | 0.078 |
| Assessing the Effects of Deep Brain Stimulation on Agency | DARTMOUTH COLLEGE | RF1 | 2018 | 0.074 |

**Cluster 23: Alcohol use disorder**

Centroids: 'alcohol', 'brain', 'exposure', 'facial', 'effects', 'consortium', 'disorders', 'children', 'spectrum', 'risk', 'treatment', 'projects', 'imaging', 'individuals', 'substance'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Complex systems analysis of the impact of alcohol on bone in non-human primates | OREGON STATE UNIVERSITY | R01 | 2020 | 0.28 |
| Ambulatory assessment of alcohol use, mood dysregulation, and alcohol craving | UNIVERSITY OF MISSOURI-COLUMBIA | R21 | 2014 | 0.27 |
| Alcohol consumption monitoring via a power-free wearable biosensor | LOGICINK CORPORATION | R43 | 2018 | 0.27 |
| Alcohol Use: Nonlinearities in Intraindividual Variables | UNIVERSITY OF SOUTHERN CALIFORNIA | F31 | 2005 | 0.26 |
| Mediators and Moderators of a Neighborhood Experiment on Alcohol Use | UNIVERSITY OF MINNESOTA | R21 | 2017 | 0.26 |

**Cluster 24: Regulatory genomics**

Centroids: 'regulatory', 'genome', 'variants', 'gene', 'human', 'genetic', 'transcription', 'regulation', 'elements', 'mutations', 'binding', 'variation', 'cell', 'dna', 'sequence'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Comprehensive functional characterization and dissection of noncoding regulatory elements and human genetic variation | BROAD INSTITUTE, INC. | UM1 | 2020 | 0.13 |
| Decoding the regulatory architecture of the human genome across cell types, individuals and disease | STANFORD UNIVERSITY | U01 | 2020 | 0.11 |
| Development of a Neuronal Regulatory Lexicon | JOHNS HOPKINS UNIVERSITY | R01 | 2018 | 0.11 |
| Interrogating regulatory variants by multiplexed genome editing | UNIVERSITY OF CALIFORNIA, SAN DIEGO | R21 | 2019 | 0.1 |
| Leveraging Tissue-Specific Regulatory Grammar to Interpret Human Evolution and Non-coding Variation | HARVARD UNIVERSITY | F32 | 2019 | 0.098 |

**Cluster 25: Natural language processing**

Centroids: 'nlp', 'text', 'language', 'natural language', 'language processing', 'natural', 'processing', 'information', 'electronic', 'records', 'medical', 'ehr', 'reports', 'surveillance', 'patient'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Open Health Natural Language Processing Collaboratory | MAYO CLINIC ROCHESTER | U01 | 2020 | 0.24 |
| Natural language processing for clinical and translational research | MAYO CLINIC ROCHESTER | R01 | 2016 | 0.23 |
| Annotation, development and evaluation for clinical information extraction | UNIVERSITY OF CALIFORNIA, SAN DIEGO | R01 | 2013 | 0.22 |
| Annotation, development and evaluation for clinical information extraction (transfer) | BOSTON CHILDREN'S HOSPITAL | R01 | 2013 | 0.22 |
| Extended Methods and Software Development for Health NLP | COLUMBIA UNIVERSITY HEALTH SCIENCES | R01 | 2019 | 0.19 |

**Cluster 26: Neurocognition**

Centroids: 'cognitive', 'attention', 'neural', 'control', 'brain', 'fmri', 'task', 'disorder', 'deficits', 'memory', 'mechanisms', 'disorders', 'emotion', 'negative', 'aging'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Neurophysiological mechanisms of cognitive and emotional control in ADHD | OREGON HEALTH & SCIENCE UNIVERSITY | K23 | 2019 | 0.077 |
| Shifting auditory spatial attention: cognitive and neural mechanisms | UNIVERSITY OF TEXAS SAN ANTONIO | R01 | 2019 | 0.062 |
| Automated Assessment of Cognitive Tests for Detecting Mild Cognitive Impairment | OREGON HEALTH & SCIENCE UNIVERSITY | R21 | 2018 | 0.053 |
| Dimensional RDoC Modeling across the Range of Negative Mood Dysfunction | UNIVERSITY OF ILLINOIS AT CHICAGO | R01 | 2016 | 0.053 |
| Positive Valence Systems and Manic Symptom Trajectories in Adolescent Depression | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2020 | 0.053 |

**Cluster 27: Lung cancer**

Centroids: 'lung', 'lung cancer', 'cancer', 'ct', 'screening', 'patients', 'disease', 'controls', 'model', 'models', 'genetic', 'cases', 'gene', 'imaging', 'dose'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Histopathology correlated quantitative analysis of lung nodules with LDCT for early detection of lung cancer | UNIVERSITY OF MICHIGAN AT ANN ARBOR | U01 | 2020 | 0.25 |
| Macro-vasculature: A Novel Image Biomarker of Lung Cance | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2020 | 0.25 |
| Lung cancer in East Africa and the relationship to HIV-1 infection: epidemiology, molecular characterization and imaging | CASE WESTERN RESERVE UNIVERSITY | U54 | 2020 | 0.24 |
| A diagnostic model for malignant pulmonary nodules | UNIVERSITY OF MARYLAND BALTIMORE | R21 | 2020 | 0.23 |
| High Density Association Analysis of Lung Cancer | UNIVERSITY OF TX MD ANDERSON CAN CTR | R01 | 2010 | 0.23 |

**Cluster 28: Stroke**

Centroids: 'stroke', 'recovery', 'patients', 'brain', 'treatment', 'risk', 'language', 'imaging', 'acute', 'disability', 'motor', 'patient', 'aim', 'cause', 'blood'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Biomarker panel to differentiate stroke from stroke mimic | PREDICTION SCIENCES, LLC | R43 | 2008 | 0.34 |
| Fast and Easy Assessment of Stroke | ALVA HEALTH, INC. | R43 | 2019 | 0.32 |
| Sleep apnea after stroke: Implications for screening and treatment | UNIVERSITY OF MICHIGAN AT ANN ARBOR | R01 | 2019 | 0.31 |
| Whole Transcriptome Studies of Patients with Transient Ischemic Attacks (TIAs) | UNIVERSITY OF CALIFORNIA AT DAVIS | R01 | 2020 | 0.3 |
| Enhancing Stroke Prehospital and Emergency Evaluation and Delivery (E-SPEED) | UNIVERSITY OF CHICAGO | R18 | 2020 | 0.29 |

**Cluster 29: Sleep**

Centroids: 'sleep', 'eeg', 'memory', 'risk', 'disease', 'cardiovascular', 'brain', 'behavior', 'disorders', 'aim', 'sensory', 'markers', 'function', 'effects', 'role'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Leveraging National Sleep Research Resource Data for Personalized Sleep Profiling | BRIGHAM AND WOMEN'S HOSPITAL | R01 | 2020 | 0.39 |
| Cardiovascular implications of sleep characteristics using real-world objective sleep data | UNIVERSITY OF WASHINGTON | R21 | 2020 | 0.38 |
| Enhanced Measurement and Modeling of Sleep Electrophysiology to Better Understand Sleep Disparities | BRIGHAM AND WOMEN'S HOSPITAL | R21 | 2020 | 0.37 |
| Administrative Supplement for Sleep and Cardiometabolic Health Disparities at the US/Mexico Border: The Nogales Cardiometabolic Health and Sleep (NoCHeS) Study | UNIVERSITY OF ARIZONA | R01 | 2019 | 0.37 |
| Sleep Health Profiles in Middle-aged Workers in Relation to Cardiovascular and Cognitive Health | UNIVERSITY OF SOUTH FLORIDA | R56 | 2020 | 0.36 |

**Cluster 30: Neural circuits**

Centroids: 'neural', 'brain', 'memory', 'circuit', 'activity', 'circuits', 'behavior', 'behavioral', 'social', 'mechanisms', 'understanding', 'cortex', 'sensory', 'processing', 'disorders'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| CRCNS: Learning the Neural Code for Prosthetic Control | BROWN UNIVERSITY | R01 | 2006 | 0.084 |
| STATISTICAL MODELING OF NEURAL INFORMATION ENCODING | MASSACHUSETTS GENERAL HOSPITAL | K02 | 2003 | 0.07 |
| Mechanisms of neural circuit dynamics in working memory | PRINCETON UNIVERSITY | U01 | 2016 | 0.07 |
| Advancing understanding of neural representations of threat perception through a novel predictive coding framework | NORTHEASTERN UNIVERSITY | F32 | 2020 | 0.066 |
| CRCNS: US-Japan Research Proposal: The Computational Principles of a Neural Face Processing System | ROCKEFELLER UNIVERSITY | R01 | 2020 | 0.065 |

**Cluster 31: Ontology generation**

Centroids: 'biomedical', 'knowledge', 'text', 'literature', 'information', 'language', 'scientists', 'language processing', 'processing', 'mining', 'researchers', 'natural language', 'annotation', 'methods', 'systems'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Exploring Natural Language Processing, Image Processing, Machine Learning, and Us | UNIV OF MASSACHUSETTS MED SCH WORCESTER | R01 | 2015 | 0.13 |
| Protege: A Knowledge-Engineering Environment for Advancing Biomedical Sciences | STANFORD UNIVERSITY | R01 | 2020 | 0.12 |
| Automated Knowledge Extraction for Biomedical Literature | BRANDEIS UNIVERSITY | R01 | 2006 | 0.11 |
| Automated Integration of Biomedical Knowledge | BRIGHAM AND WOMEN'S HOSPITAL | R01 | 2010 | 0.099 |
| National Center for Biomedical Ontology | STANFORD UNIVERSITY | U54 | 2014 | 0.098 |

**Cluster 32: Magnetic resonance imaging (MRI)**

Centroids: 'mri', 'imaging', 'motion', 'mr', 'image', 'tissue', 'resolution', 'prostate', 'contrast', 'magnetic', 'resonance', 'cardiac', 'brain', 'images', 'quantitative'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Functional Cardiovascular 4D MRI in Congenital Heart Disease | NORTHWESTERN UNIVERSITY AT CHICAGO | R01 | 2020 | 0.098 |
| Bayesian Parallel Imaging For Arbitrarily Sampled MR Data Using Edge-Preserving S | WEILL MEDICAL COLL OF CORNELL UNIV | R21 | 2009 | 0.095 |
| Osteoarthritis: Quantitative Evaluation of Whole Joint Disease with MRI | STANFORD UNIVERSITY | R01 | 2020 | 0.091 |
| Machine learning for fast motion compensated quantitative abdominal DCE-MRI | BOSTON CHILDREN'S HOSPITAL | R21 | 2020 | 0.085 |
| Enabling Kinematic Joint Profiling Using MRI | MEDICAL COLLEGE OF WISCONSIN | R21 | 2020 | 0.085 |

**Cluster 33: Cigarette smoking**

Centroids: 'smoking', 'real', 'real time', 'time', 'stress', 'participants', 'environmental', 'interventions', 'assessment', 'field', 'real world', 'proposed', 'social', 'mobile', 'study'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Smartband/smartphone-based automatic smoking detection and real time mindfulness intervention | YALE UNIVERSITY | R34 | 2020 | 0.44 |
| An Olfactory Method for Controlling Cigarette Craving | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2017 | 0.39 |
| An Olfactory Method for Controlling Cigarette Craving - Supplement | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2015 | 0.39 |
| Smoking Cessation Coach--An Internet Tailoring Program | JOHNS HOPKINS UNIVERSITY | R21 | 2002 | 0.38 |
| Eliminating Tobacco-Related Disparities amount African American Smokers | UNIVERSITY OF UTAH | R01 | 2020 | 0.38 |

**Cluster 34: Non-descript**

Centroids: 'medical', 'information', 'patient', 'ehr', 'electronic', 'safety', 'records', 'language', 'natural language', 'text', 'language processing', 'natural', 'record', 'methods', 'care'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Developing Evidence- based User Centered Design and Implementation Guidelines to Improve Health Information Technology Usability | MEDSTAR HEALTH RESEARCH INSTITUTE | R01 | 2019 | 0.036 |
| Improving Patient Safety and Clinician Cognitive Support Through eMAR Redesign | MEDSTAR HEALTH RESEARCH INSTITUTE | R01 | 2020 | 0.034 |
| Dynamic learning for post-vaccine event prediction using temporal information in VAERS | UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON | R01 | 2020 | 0.028 |
| An Information Fusion Approach to Longitudinal Health Records | OHIO STATE UNIVERSITY | R01 | 2015 | 0.028 |
| Collaborative Research: Statistical algorithms for anomaly detection and patterns recognition in patient care and safety event reports | VIRGINIA POLYTECHNIC INST AND ST UNIV | R01 | 2019 | 0.028 |

**Cluster 35: Older adults**

Centroids: 'older', 'older adults', 'adults', 'depression', 'aging', 'risk', 'treatment', 'age', 'patients', 'cognitive', 'life', 'study', 'aim', 'care', 'outcomes'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Frailty, Statins, and Cardiovascular Disease Burden in Older Adults | HARVARD MEDICAL SCHOOL | R03 | 2019 | 0.23 |
| Web-based App to Alleviate Loneliness and Isolation in Older Adults at Home | VIGOROUS MIND, INC. | R43 | 2018 | 0.23 |
| Multimorbidity and Treatment-Related Outcomes in Older Heart Failure Patients | UNIV OF MASSACHUSETTS MED SCH WORCESTER | R01 | 2020 | 0.22 |
| Changes in Multimorbidity and Disability Among Race/Ethnic Older Adults (AD/ADRD-Focused Administrative Supplement) | OREGON HEALTH & SCIENCE UNIVERSITY | R01 | 2018 | 0.22 |
| Polypharmacy, Potentially Inappropriate Medications, and Adverse Outcomes in Older Adults with Advanced Cancer Receiving Chemotherapy | UNIVERSITY OF ROCHESTER | R03 | 2020 | 0.21 |

**Cluster 36: Breast cancer**

Centroids: 'breast', 'breast cancer', 'cancer', 'women', 'risk', 'screening', 'imaging', 'tumor', 'patients', 'decision', 'detection', 'early', 'diagnosis', 'cancers', 'computer'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Quantitative Parenchyma Descriptor as an Imaging Biomarker of Breast Cancer Risk | UNIVERSITY OF MICHIGAN AT ANN ARBOR | U01 | 2019 | 0.27 |
| Using Markov Decision Processes to Optimize Breast Biopsy Decision Making | UNIVERSITY OF WISCONSIN-MADISON | R21 | 2009 | 0.26 |
| Informatics Techniques to Optimize Mammography for Aging Populations | UNIVERSITY OF WISCONSIN-MADISON | R01 | 2016 | 0.26 |
| A Noninvasive, Precision Medicine Approach to Improve Breast Cancer Screening Using Cell-free RNA from Saliva. | PRIME GENOMICS, INC. | R43 | 2019 | 0.26 |
| Convergent AI for Precise Breast Cancer Risk Assessment | METHODIST HOSPITAL RESEARCH INSTITUTE | R01 | 2020 | 0.25 |

**Cluster 37: Language development**

Centroids: 'language', 'infants', 'children', 'acquisition', 'statistical', 'speech', 'input', 'disorders', 'patterns', 'development', 'processing', 'proposed', 'natural', 'natural language', 'mechanisms'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Structural and Semantic Cues for the Acquisition of Linguistic Regularties | UNIVERSITY OF WISCONSIN-MADISON | F31 | 2011 | 0.22 |
| Neurocognitive determinants of adolescent second language literacy development | HASKINS LABORATORIES, INC. | R01 | 2015 | 0.21 |
| Statistical Learning in Language Acquisition | UNIVERSITY OF WISCONSIN-MADISON | R37 | 2019 | 0.2 |
| Linking Language Comprehension to Production Patterns | UNIVERSITY OF WISCONSIN-MADISON | R01 | 2008 | 0.2 |
| The When to Worry about Language Study (W2W-L): Joint consideration of developmental patterning and neural substrates for enhancing earlyidentification of language impairment | NORTHWESTERN UNIVERSITY | R01 | 2020 | 0.19 |

**Cluster 38: Mental health**

Centroids: 'mental', 'mental health', 'disorders', 'treatment', 'illness', 'behavioral', 'social', 'training', 'depression', 'psychiatric', 'methods', 'patients', 'aim', 'early', 'care'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Assisted Identification and Navigation of Early Mental Health Symptoms in Youth | KAISER FOUNDATION RESEARCH INSTITUTE | R56 | 2018 | 0.19 |
| Estimating Population Effects in Mental Health Research Using Meta-Analysis | DUKE UNIVERSITY | R00 | 2020 | 0.17 |
| Improved methods to assess the comparative safety of new psychiatric medications | BRIGHAM AND WOMEN'S HOSPITAL | K01 | 2017 | 0.16 |
| CBTpro: Scaling up CBT for psychosis using simulated patients and spoken language technologies | LYSSN.IO, INC. | R42 | 2020 | 0.16 |
| Real-Time Mobile Cognitive Behavioral Intervention for Serious Mental Illness | UNIVERSITY OF CALIFORNIA, SAN DIEGO | R01 | 2016 | 0.16 |

**Cluster 39: Obesity**

Centroids: 'shape', 'obesity', 'body', '3d', 'childhood', 'risk', 'factors', 'models', 'model', 'parameters', 'analysis', 'assessment', 'metabolic', 'visual', 'methods'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Shape up! Kids | UNIVERSITY OF HAWAII AT MANOA | R01 | 2020 | 0.16 |
| Optical Body Composition and Health Assessment | UNIVERSITY OF HAWAII AT MANOA | R01 | 2020 | 0.15 |
| Computational Modeling of Anatomical Shape Distributions | MASSACHUSETTS INSTITUTE OF TECHNOLOGY | R01 | 2009 | 0.13 |
| Validation and Evaluation of a Portable Body Scanner for Determination of Obesity | UNIVERSITY OF TEXAS, AUSTIN | R21 | 2009 | 0.13 |
| Calculation of Percent Body Fat by Analyzing Virtual Body Models | GEORGE WASHINGTON UNIVERSITY | R21 | 2016 | 0.12 |

**Cluster 40: Vision/Visual abnormalities**

Centroids: 'visual', 'vision', 'eye', 'computer', 'impaired', 'recognition', 'computer vision', 'low', 'images', 'people', 'information', 'human', 'understanding', 'neural', 'user'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Cue Reliability and Depth Calibration During Space Perception | STATE COLLEGE OF OPTOMETRY | R01 | 2011 | 0.16 |
| Towards cortical visual prosthetics | BOSTON CHILDREN'S HOSPITAL | R21 | 2010 | 0.15 |
| Designing Visually Accessible Spaces | UNIVERSITY OF MINNESOTA | R01 | 2018 | 0.15 |
| A Visual Assessment System for Retinal Function/Drug Discovery | AFASCI, INC. | R41 | 2015 | 0.14 |
| Perceptual bases of visual concepts | UNIVERSITY OF IOWA | R01 | 2010 | 0.13 |

**Cluster 41: “Big data” education**

Centroids: 'big', 'big data', 'science', 'biomedical', 'training', 'methods', 'scientists', 'tools', 'program', 'complex', 'social', 'brain', 'computing', 'computational', 'machine learning'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Big Data Coursework for Computational Medicine | WEILL MEDICAL COLL OF CORNELL UNIV | R25 | 2016 | 0.24 |
| Fisk University/UIUC-Mayo KnowENG BD2K Center R25 Partnership | FISK UNIVERSITY | R25 | 2019 | 0.23 |
| Administrative Supplement Request for Transforming Analytical Learning in the Era of Big Data | UNIVERSITY OF MICHIGAN AT ANN ARBOR | R25 | 2016 | 0.21 |
| Summer Institute for Statistics of Big Data | UNIVERSITY OF WASHINGTON | R25 | 2016 | 0.18 |
| Developing Cloud-based tools for Big Neural Data | UNIVERSITY OF PENNSYLVANIA | K01 | 2015 | 0.17 |

**Cluster 42: Non-descript**

Centroids: 'social', 'intervention', 'interventions', 'mobile', 'behavior', 'behavioral', 'treatment', 'control', 'study', 'training', 'support', 'care', 'families', 'risk', 'adolescents'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Wiring Adolescents With Social Anxiety via Behavioral Interventions (WASABI): a closed-loop mobile intervention to reduce social anxiety and improve social skills | POSIT SCIENCE CORPORATION | R43 | 2019 | 0.055 |
| Feasibility Trial of a Problem-Solving Weight Loss Mobile Application | UNIV OF MASSACHUSETTS MED SCH WORCESTER | R21 | 2014 | 0.043 |
| Artificial Intelligence in a Mobile Intervention for Depression (AIM) | NORTHWESTERN UNIVERSITY AT CHICAGO | R01 | 2017 | 0.032 |
| Pragmatics to Reveal Intention in Social Media (PRISM) for Health Promotion | UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON | R01 | 2020 | 0.031 |
| Supplementing Survey-Based Analyses of Group Vaccination Narratives and Behaviors Using Social Media | GEORGE WASHINGTON UNIVERSITY | R01 | 2019 | 0.031 |

**Cluster 43: Science education**

Centroids: 'students', 'science', 'school', 'course', 'program', 'biomedical', 'biology', 'support', 'phase', 'software', 'technology', 'medical', 'computer', 'scientific', 'content'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Building a classroom game economy to improve mathematical reasoning and prepare K-5 students for success in STEM learning | TEACHLEY, LLC | R44 | 2020 | 0.26 |
| An interactive, digital platform to transform biological learning | SQUID BOOKS, LLC | R44 | 2020 | 0.25 |
| An interactive, digital platform to transform physical science learning | SQUID BOOKS, LLC | R44 | 2020 | 0.24 |
| MUSC Minority Student Development Program | MEDICAL UNIVERSITY OF SOUTH CAROLINA | R25 | 2008 | 0.24 |
| MBRS IMSD Program at the University of Kansas | UNIVERSITY OF KANSAS LAWRENCE | R25 | 2008 | 0.23 |

**Cluster 44: Motor disorders**

Centroids: 'motor', 'movement', 'control', 'stimulation', 'neural', 'function', 'signals', 'injury', 'sensory', 'signal', 'activity', 'circuits', 'studies', 'brain', 'development'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Enabling forelimb function with agonist drug and epidural stimulation in SCI | UNIVERSITY OF CALIFORNIA LOS ANGELES | U01 | 2017 | 0.15 |
| Defining the anatomical, molecular and functional logic of internal copy circuits involved in dexterous forelimb behaviors | SALK INSTITUTE FOR BIOLOGICAL STUDIES | R01 | 2020 | 0.14 |
| Spinal Epidural Electrode Array to Facilitate Standing and Stepping After SCI | UNIVERSITY OF CALIFORNIA LOS ANGELES | R01 | 2012 | 0.14 |
| Spinal Epidural Electrode Array To Facilitate Standing and Stepping After SCI | UNIVERSITY OF CALIFORNIA LOS ANGELES | U01 | 2018 | 0.14 |
| Non-Invasive System for Identifying Neural Behavior | ALTEC, INC. | R01 | 2009 | 0.14 |

**Cluster 45: Autism**

Centroids: 'asd', 'autism', 'children', 'brain', 'disorder', 'connectivity', 'behavioral', 'spectrum', 'disorders', 'early', 'social', 'infants', 'functional', 'developmental', 'language'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Cerebellar connectivity and error-based learning in infants at risk for autism | WASHINGTON UNIVERSITY | F31 | 2020 | 0.29 |
| Investigating quantitative signatures of autism in toddlers | COLUMBIA UNIVERSITY TEACHERS COLLEGE | R01 | 2020 | 0.26 |
| Novel video-based approaches for detection of autism risk in the first year of life | UNIVERSITY OF CALIFORNIA AT DAVIS | R01 | 2020 | 0.25 |
| Co-occurring ADHD in young children with ASD: Precursors, detection, neural signatures, and early treatment | DUKE UNIVERSITY | P50 | 2020 | 0.24 |
| Adapting Biomarker Assays for Individuals with Autism and Intellectual Disability | YALE UNIVERSITY | R21 | 2020 | 0.24 |

**Cluster 46: Mass Spectrometry**

Centroids: 'ms', 'mass', 'disease', 'biomarkers', 'protein', 'analysis', 'analytical', 'proteins', 'high', 'identification', 'patients', 'samples', 'methods', 'diagnosis', 'identify'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| A New Model of Peptide Fragmentation for Improved Protein Identification and Targ | UNIVERSITY OF COLORADO | R01 | 2015 | 0.27 |
| Improving Diagnosis of Multiple Sclerosis Through the Integration of Novel Imaging and Laboratory Biomarkers | UNIVERSITY OF VERMONT & ST AGRIC COLLEGE | K02 | 2020 | 0.26 |
| Analysis of LC-MS data to identify peptide and glycan biomarkers for hepatocellul | GEORGETOWN UNIVERSITY | R01 | 2014 | 0.24 |
| Sequential Ion/Ion Reactions for Large Peptide and Whole Protein Characterization | UNIVERSITY OF WISCONSIN-MADISON | R01 | 2015 | 0.23 |
| Novel Strategies to Identify GxE Contributions to MS Pathogenesis | UNIVERSITY OF CALIFORNIA BERKELEY | R01 | 2015 | 0.22 |

**Cluster 47: Basic neuroscience**

Centroids: 'neuroscience', 'core', 'computational', 'neuronal', 'tools', 'center', 'brain', 'informatics', 'integrated', 'consortium', 'community', 'training', 'complex', 'alcohol', 'resources'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| NEW DRUG TARGETS FOR APOPTOSIS | UNIVERSITY OF ARIZONA | P01 | 2006 | 0.16 |
| Integrated Neuroinformatics Resource for Alcoholism (IN\* | UNIVERSITY OF COLORADO DENVER | U01 | 2005 | 0.16 |
| Neuroscience Gateway to Enable Dissemination of Computational And Data Processing Tools And Software. | UNIVERSITY OF CALIFORNIA, SAN DIEGO | U24 | 2020 | 0.13 |
| Training a new generation of computational neuroscientists bridging neurobiology | NEW YORK UNIVERSITY | R90 | 2020 | 0.11 |
| Neuroinformatics platform using machine learning and content-based image retrieval for neuroscience image data | MICROBRIGHTFIELD, LLC | R44 | 2020 | 0.082 |

**Cluster 48: Environmental science**

Centroids: 'cell', 'cells', 'single cell', 'single', 'cellular', 'cell types', 'types', 'human', 'tissue', 'analysis', 'molecular', 'signaling', 'disease', 'immune', 'aim'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Principal Component Pursuit to Assess Exposure to Environmental Mixtures in Epidemiologic Studies | COLUMBIA UNIVERSITY HEALTH SCIENCES | R01 | 2020 | 0.13 |
| Complex Mixtures of Endocrine Disrupting Chemicals in Relation to Cognitive Development | COLUMBIA UNIVERSITY HEALTH SCIENCES | F31 | 2020 | 0.13 |
| Spatiotemporal Risk Assessment Modeling of Chemical Mixtures | OREGON STATE UNIVERSITY | K99 | 2019 | 0.12 |
| Bringing Modern Data Science Tools to Bear on Environmental Mixtures: Administrative Supplement for U3 Populations | RICE UNIVERSITY | R01 | 2019 | 0.12 |
| Bringing Modern Data Science Tools to Bear on Environmental Mixtures | RICE UNIVERSITY | R01 | 2020 | 0.11 |

**Cluster 49: Genome wide association studies**

Centroids: 'cell', 'cells', 'single cell', 'single', 'cellular', 'cell types', 'types', 'human', 'tissue', 'analysis', 'molecular', 'signaling', 'disease', 'immune', 'aim'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Genome-Wide Association Analysis of Bladder Cancer | UNIVERSITY OF TX MD ANDERSON CAN CTR | U01 | 2012 | 0.092 |
| International Case Control Study of Malignant Glioma | BAYLOR COLLEGE OF MEDICINE | R01 | 2015 | 0.091 |
| Machine Learning Prediction of Cancer Susceptibility | UNIVERSITY OF PENNSYLVANIA | R01 | 2014 | 0.082 |
| Identification of gene-gene interactions in relation to risk of esophageal adenocarcinoma and Barrett's esophagus | ROSWELL PARK CANCER INSTITUTE CORP | R03 | 2019 | 0.08 |
| Genetic Factors in Keratoconus | CEDARS-SINAI MEDICAL CENTER | R01 | 2019 | 0.076 |

**Cluster 50: Asthma**

Centroids: 'asthma', 'children', 'childhood', 'genetic', 'disease', 'gene expression', 'expression', 'pediatric', 'chronic', 'gene', 'exposure', 'severe', 'variants', 'candidate', 'lung'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Nasal biomarkers of asthma | ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI | R01 | 2019 | 0.46 |
| Asthma ascertainment and characterization through electronic health records | MAYO CLINIC ROCHESTER | R01 | 2017 | 0.44 |
| Multi-Omics Analysis of the Association of Polyunsaturated Fatty Acids with Asthma and Allergy in Childhood | BRIGHAM AND WOMEN'S HOSPITAL | K08 | 2020 | 0.41 |
| SCH: kHealth: Semantic Multisensory Mobile Approach to Personalized Asthma Care | WRIGHT STATE UNIVERSITY | R01 | 2018 | 0.4 |
| OBJECTIVE HOME MANAGEMENT OF PEDIATRIC ASTHMA EXACERBATION USING MOBILE TECHNOLOGY AND MACHINE LEARNING | AUSCULTECH DX, LLC | R41 | 2020 | 0.4 |

**Cluster 51: Physical activity**

Centroids: 'activity', 'physical', 'home', 'activities', 'living', 'aging', 'daily', 'time', 'assessment', 'patterns', 'intervention', 'behavior', 'metabolic', 'functional', 'monitoring'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| An Intelligent Physical Activity Monitor | CREARE, INC. | R43 | 2006 | 0.11 |
| Novel Approaches for Predicting Unstructured Short Periods of Physical Activities in Youth | UNIVERSITY OF TENNESSEE KNOXVILLE | R01 | 2019 | 0.11 |
| Advancing Physical Activity Measurement Using Pattern Recognition Techniques | UNIVERSITY OF MASSACHUSETTS AMHERST | RC1 | 2010 | 0.11 |
| A cutting edge approach to assessing physical activities occurring on sidewalks/streets | UNIVERSITY OF DELAWARE | R21 | 2019 | 0.11 |
| Enabling Population-Scale Physical Activity Measurement on Common Mobile Phones | MASSACHUSETTS INSTITUTE OF TECHNOLOGY | U01 | 2010 | 0.097 |

**Cluster 52: Clinical genomics**

Centroids: 'genetic', 'variants', 'testing', 'genes', 'mutations', 'aim', 'test', 'specific', 'assay', 'dna', 'sequencing', 'specific aim', 'database', 'resistance', 'phenotypic'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Clinically Relevant Genome Variation Database | STANFORD UNIVERSITY | U01 | 2016 | 0.089 |
| Optimizing Genetic Testing for Deafness for Clinical Diagnostics | UNIVERSITY OF IOWA | R01 | 2020 | 0.066 |
| Decrypting Variants of Uncertain Significance in Long-QT Syndrome | NORTHWESTERN UNIVERSITY AT CHICAGO | R01 | 2017 | 0.066 |
| Machine vision analysis of C.elegans phenotypic patterns | CALIFORNIA INSTITUTE OF TECHNOLOGY | R01 | 2009 | 0.058 |
| Tracing the evolution of the human mutation rate | STANFORD UNIVERSITY | F32 | 2017 | 0.052 |

**Cluster 53: Electronic medical record phenotyping**

Centroids: 'emr', 'genomic', 'electronic', 'medicine', 'medical', 'genetic', 'care', 'phenotypes', 'network', 'ehr', 'healthcare', 'records', 'phenotype', 'discovery', 'genomics'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| EMR-Linked Biobank for Translational Genomics | GEISINGER CLINIC | U01 | 2019 | 0.18 |
| OMOP information model for eMERGE phenotyping | GEISINGER CLINIC | U01 | 2017 | 0.16 |
| The Electronic Medical Records and Genomics (eMERGE) Network, Phase III | KAISER FOUNDATION RESEARCH INSTITUTE | U01 | 2019 | 0.15 |
| Vanderbilt Genome-Electronic Records Project | VANDERBILT UNIVERSITY | U01 | 2011 | 0.13 |
| EHR-based Genomic Discovery and Implementation | MAYO CLINIC ROCHESTER | U01 | 2019 | 0.13 |

**Cluster 54: Cancer imaging**

Centroids: 'tumor', 'tumors', 'cancer', 'imaging', 'treatment', 'tissue', 'cell', 'image', 'therapy', 'brain', 'cells', 'patient', 'molecular', 'patients', 'response'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Predicting brain tumor progression via multiparametric image analysis and modelin | UNIVERSITY OF PENNSYLVANIA | R01 | 2018 | 0.2 |
| Automatic Volumetric Treatment Response Assessment and Determination of Regional Genetic Characteristics in Glioblastoma | HARVARD MEDICAL SCHOOL | F30 | 2020 | 0.15 |
| Quantitative Multimodal Image Guidance for Improved Liver Cancer Treatment | YALE UNIVERSITY | R01 | 2020 | 0.14 |
| Systems Microscopy Analysis of Tumor Cell Motility in Microenvironment Context | TEMPLE UNIV OF THE COMMONWEALTH | R00 | 2017 | 0.14 |
| Systems microscopy analysis of tumor cell motility in microenvironment context | ALBERT EINSTEIN COLLEGE OF MEDICINE | K99 | 2014 | 0.14 |

**Cluster 55: RNA sequencing**

Centroids: 'rna', 'human', 'sequencing', 'regulation', 'binding', 'structure', 'regulatory', 'computational', 'coding', 'genome', 'gene', 'expression', 'functional', 'function', 'cell'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Programmable RNA-targeting CRISPR-Cas tools to study RNA biology | UNIVERSITY OF ROCHESTER | R35 | 2020 | 0.33 |
| The next generation of RNA-Seq simulators for benchmarking analyses | UNIVERSITY OF PENNSYLVANIA | R21 | 2019 | 0.29 |
| New methods for computational modeling of RNA structures | UNIVERSITY OF MISSOURI-COLUMBIA | R35 | 2020 | 0.29 |
| Defining the messenger RNP code in the brain | UNIVERSITY OF CALIFORNIA, SAN DIEGO | R01 | 2016 | 0.27 |
| Computational genome-wide RNA profiling using next-generation sequencing | UNIVERSITY OF PENNSYLVANIA | R01 | 2016 | 0.27 |

**Cluster 56: Emotion**

Centroids: 'facial', 'emotion', 'social', 'expression', 'recognition', 'processing', 'automated', 'computer', 'children', 'measurement', 'behavior', 'autism', 'modeling', 'behavioral', 'coding'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Automated Facial Expression Analysis for Research and Clinical Use | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2016 | 0.25 |
| A Study of the Computational Space of Facial Expressions of Emotion | OHIO STATE UNIVERSITY | R01 | 2014 | 0.23 |
| FACIAL EXPRESSION ANALYSIS BY IMAGE PROCESSING | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2005 | 0.23 |
| COMPUTER VISION ANALYSIS OF DYNAMIC FACIAL BEHAVIOR | UNIVERSITY OF CALIFORNIA SAN DIEGO | F32 | 2001 | 0.22 |
| Multi-feature modeling of the neural representation of emotion- and identity-related information derived from facial and vocal cues | UNIVERSITY OF CALIFORNIA BERKELEY | R01 | 2019 | 0.2 |

**Cluster 57: Parkinson’s Disease**

Centroids: 'pd', 'disease', 'cognitive', 'stimulation', 'brain', 'dysfunction', 'motor', 'biomarkers', 'progression', 'biomarker', 'early', 'patients', 'blood', 'study', 'identify'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Mid-frontal delta/theta rhythms and cognitive control in PD | UNIVERSITY OF IOWA | R01 | 2020 | 0.37 |
| Intrinsic Cortical Networks and Cognitive Dysfunction in Parkinson's Disease | UNIVERSITY OF COLORADO DENVER | K02 | 2017 | 0.34 |
| Intrinsic Cortical Networks and Cognitive Dysfunction in Parkinson???s Disease | UNIVERSITY OF COLORADO DENVER | K02 | 2014 | 0.34 |
| Multi-tissue high-throughput proteomic and genomic study in Parkinson's Disease | WASHINGTON UNIVERSITY | R01 | 2020 | 0.32 |
| Characterizing Intrinsic Functional Cortical Networks in Parkinson Disease Dementia | UNIVERSITY OF COLORADO DENVER | R21 | 2017 | 0.32 |

**Cluster 58: Drug efficacy**

Centroids: 'drug', 'drugs', 'discovery', 'safety', 'models', 'effects', 'adverse', 'treatment', 'chemical', 'resistance', 'novel', 'development', 'methods', 'target', 'computational'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| An Integrative Approach to Drug Repositioning Using Decision Tree Based Machine Learning | WEILL MEDICAL COLL OF CORNELL UNIV | F31 | 2020 | 0.17 |
| A systems analysis of drug tolerance in Mycobacterium tuberculosis | INSTITUTE FOR SYSTEMS BIOLOGY | R01 | 2020 | 0.17 |
| Impacts of a Novel law-enforcement delivered intervention on drug user health | UNIVERSITY OF CALIFORNIA, SAN DIEGO | R01 | 2020 | 0.15 |
| Novel computational approaches to predict drug response and combination effects | UT SOUTHWESTERN MEDICAL CENTER | R35 | 2020 | 0.13 |
| A multifactorial pipeline to dissect combinatorial drug efficacy in Tuberculosis | UNIVERSITY OF WASHINGTON | R56 | 2020 | 0.13 |

**Cluster 59: Microbiome**

Centroids: 'microbiome', 'host', 'human', 'infection', 'computational', 'interactions', 'immune', 'disease', 'species', 'biology', 'models', 'understanding', 'community', 'novel', 'approaches'

Representative awards:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Awardee** | **Award Activity** | **Year** | **Sample Silhouette Score** |
| Impact of Gastrointestinal Microbiome on the Host Response to an Effector-Memory T-Cell AIDS Vaccine and Multiple Low-Dose Challenge | NORTH CAROLINA STATE UNIVERSITY RALEIGH | R21 | 2016 | 0.12 |
| Combining chemical and computational tools for predictive models of microbiome communities | UNIVERSITY OF PENNSYLVANIA | R35 | 2020 | 0.11 |
| Computational Studies of Virus-host Interactions Using Metagenomics Data and Applications | UNIVERSITY OF SOUTHERN CALIFORNIA | R01 | 2020 | 0.11 |
| Model-guided design of next-generation bacterial therapeutics to treat cardiovascular disease | UNIVERSITY OF WISCONSIN-MADISON | R01 | 2020 | 0.11 |
| Bayesian Machine Learning Tools for Analyzing Microbiome Dynamics | BRIGHAM AND WOMEN'S HOSPITAL | R01 | 2020 | 0.099 |