**Cluster 0**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Nasal biomarkers of asthma | ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI | R01 | 2019 | 0.47 |
| Asthma ascertainment and characterization through electronic health records | MAYO CLINIC ROCHESTER | R01 | 2017 | 0.45 |
| 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 |
| Multifactorial spatiotemporal analyses to evaluate environmental triggers and patient-level clinical characteristics of severe asthma exacerbations in children | DUKE UNIVERSITY | R21 | 2020 | 0.4 |

**Cluster 1**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| National Center for Biomedical Ontology | STANFORD UNIVERSITY | U54 | 2014 | 0.084 |
| Protege: A Knowledge-Engineering Environment for Advancing Biomedical Sciences | STANFORD UNIVERSITY | R01 | 2020 | 0.081 |
| Exploring Natural Language Processing, Image Processing, Machine Learning, and Us | UNIV OF MASSACHUSETTS MED SCH WORCESTER | R01 | 2015 | 0.079 |
| Knowledge-Based Biomedical Data Science | UNIVERSITY OF COLORADO DENVER | R01 | 2020 | 0.079 |
| Automated Knowledge Extraction for Biomedical Literature | BRANDEIS UNIVERSITY | R01 | 2006 | 0.076 |

**Cluster 2**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Technology-Enabled Therapy for Elders with Mild Cognitive Impairment and Co-morbid Insomnia | ENVIRONMENT AND HEALTH GROUP, INC. | R43 | 2018 | 0.16 |
| Web-based App to Alleviate Loneliness and Isolation in Older Adults at Home | VIGOROUS MIND, INC. | R43 | 2018 | 0.16 |
| Cognitive and social aspects of decision-making | UNIVERSITY OF COLORADO AT COLORADO SPGS | R15 | 2002 | 0.15 |
| Statistical methods for vitamin D targets for functional outcomes in older adults | UNIVERSITY OF MARYLAND BALTIMORE | R01 | 2019 | 0.14 |
| Integrated Web-Based Customer Engagement, Physical Exercise, and Coaching Platform for Older Adults | VIGOROUS MIND, INC. | R43 | 2017 | 0.14 |

**Cluster 3**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Risk Profiles for Suicidal Behavior in the General Population | BOSTON UNIVERSITY MEDICAL CAMPUS | R01 | 2019 | 0.06 |
| MAPS: Mobile Assessment for the Prediction of Suicide | UNIVERSITY OF OREGON | U01 | 2020 | 0.057 |
| Digital Monitoring of Agitation for Short-Term Suicide Risk Prediction | MASSACHUSETTS GENERAL HOSPITAL | K23 | 2020 | 0.051 |
| Multimodal Assessment of Near-term Risk Processes for Suicide Ideation and Behavior | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2020 | 0.05 |
| Harnessing Computerized Adaptive Testing, Transdiagnostic Theories of Suicidal Behavior, and Machine Learning to Advance the Emergent Assessment of Suicidal Youth (EASY). | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2020 | 0.05 |

**Cluster 4**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Predicting brain tumor progression via multiparametric image analysis and modelin | UNIVERSITY OF PENNSYLVANIA | R01 | 2018 | 0.15 |
| Statistical atlases of brain tumor MRI:do imaging phenotypes predict progression? | UNIVERSITY OF PENNSYLVANIA | R01 | 2012 | 0.11 |
| MDCT Quantification of hepatic tumor viability for assessment of cancer therapy | IQ MEDICAL IMAGING, LLC | R42 | 2019 | 0.092 |
| Automatic Volumetric Treatment Response Assessment and Determination of Regional Genetic Characteristics in Glioblastoma | HARVARD MEDICAL SCHOOL | F30 | 2020 | 0.089 |
| Quantitative Image Modeling for Brain Tumor Analysis and Tracking | OLD DOMINION UNIVERSITY | R01 | 2019 | 0.087 |

**Cluster 5**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Integrating multidimensional genomic data to discover clinically-relevant predictive models | UNIVERSITY OF ALABAMA AT BIRMINGHAM | R00 | 2020 | 0.05 |
| HERCULES: Exposome Research Center | EMORY UNIVERSITY | P30 | 2020 | 0.04 |
| Research Education in Statistical Genetics of Substance Abuse | VIRGINIA COMMONWEALTH UNIVERSITY | R25 | 2012 | 0.037 |
| Multigenic Dissection of Nonsyndromic Oral Clefts | HARVARD MEDICAL SCHOOL | K08 | 2010 | 0.036 |
| Center for Environmental Genetics | UNIVERSITY OF CINCINNATI | P30 | 2017 | 0.033 |

**Cluster 6**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Delineating proactive social behaviors in dynamic and multidimensional social space | ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI | R21 | 2020 | 0.091 |
| Studying how the hippocampal-prefrontal-hypothalamic circuit encodes social dominance | SALK INSTITUTE FOR BIOLOGICAL STUDIES | K99 | 2020 | 0.086 |
| BIGDATA: Small DA Social Behavior Driven Modeling and Optimization of Information | GEORGIA INSTITUTE OF TECHNOLOGY | R01 | 2015 | 0.081 |
| The Molecular Underpinnings of Complex Social Behavior | ROCKEFELLER UNIVERSITY | R35 | 2020 | 0.08 |
| Neural Circuit Mechanisms of Social Homeostasis in Individuals and Supraorganismal Social Groups | SALK INSTITUTE FOR BIOLOGICAL STUDIES | DP1 | 2020 | 0.075 |

**Cluster 7**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Mid-frontal delta/theta rhythms and cognitive control in PD | UNIVERSITY OF IOWA | R01 | 2020 | 0.32 |
| Intrinsic Cortical Networks and Cognitive Dysfunction in Parkinson's Disease | UNIVERSITY OF COLORADO DENVER | K02 | 2017 | 0.31 |
| Intrinsic Cortical Networks and Cognitive Dysfunction in Parkinson???s Disease | UNIVERSITY OF COLORADO DENVER | K02 | 2014 | 0.31 |
| The Gut Microbiome in Parkinson Disease | UNIVERSITY OF MASSACHUSETTS LOWELL | R01 | 2019 | 0.29 |
| Characterizing Intrinsic Functional Cortical Networks in Parkinson Disease Dementia | UNIVERSITY OF COLORADO DENVER | R21 | 2017 | 0.29 |

**Cluster 8**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Consumer Assessment of Healthcare Providers and Systems V (CAHPS V) | RAND CORPORATION | U18 | 2020 | 0.07 |
| SCH: INT Re-envisioned Chat-assessment for Real-time Investigating of Nursing and Guidance | EMORY UNIVERSITY | R01 | 2020 | 0.061 |
| Automatic Acquisition of Knowledge for Senior Care Planning | MY HEALTH CARE | R44 | 2011 | 0.058 |
| Adaptation and pilot implementation of a validated, electronic real time clinical decision support tool for care of Pneumonia patients in 12 Utah Urgent Care Centers | IHC HEALTH SERVICES, INC. | R18 | 2020 | 0.052 |
| Aligning Patient Acuity with Intensity of Care after Surgery | UNIVERSITY OF FLORIDA | K23 | 2020 | 0.05 |

**Cluster 9**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Digital Mammography: Advanced Computer-Aided Breast Can\* | UNIVERSITY OF MICHIGAN | R01 | 2007 | 0.081 |
| Development and Dissemination of MuscleMiner: An Imaging Informatics Tool for Mus | UNIVERSITY OF FLORIDA | R01 | 2018 | 0.076 |
| Development and Dissemination of MuscleMiner: An Imaging Informatics System for Muscle | UNIVERSITY OF FLORIDA | R01 | 2016 | 0.076 |
| Multimodal image registration by proxy image synthesis | JOHNS HOPKINS UNIVERSITY | R01 | 2015 | 0.075 |
| Computer analysis of optic disc images in glaucoma | UNIVERSITY OF PENNSYLVANIA | R01 | 2011 | 0.07 |

**Cluster 10**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| A statistical framework to systematically characterize cancer driver mutations in noncoding genomic regions | DANA-FARBER CANCER INST | R21 | 2020 | 0.21 |
| Computational evaluation of the causal role of somatic mutations in human aging | ALBERT EINSTEIN COLLEGE OF MEDICINE | K99 | 2019 | 0.18 |
| Massively parallel functional analyses of human PTEN variants | OREGON HEALTH & SCIENCE UNIVERSITY | F31 | 2019 | 0.18 |
| Functional Annotation of Natural and Disease Variants in Tryosine Kinases | UNIVERSITY OF GEORGIA | R01 | 2020 | 0.18 |
| Informatics Tools for High-throughput Analysis of Cancer Mutations | JOHNS HOPKINS UNIVERSITY | U01 | 2015 | 0.17 |

**Cluster 11**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| CRCNS: Learning the Neural Code for Prosthetic Control | BROWN UNIVERSITY | R01 | 2006 | 0.078 |
| Investigating Ventral CA1 Neural Representations of Anxiety-Like Behavior | COLUMBIA UNIVERSITY HEALTH SCIENCES | F30 | 2020 | 0.077 |
| Reinforcement learning and action sequencing in subcortical and cortical circuits | COLUMBIA UNIVERSITY HEALTH SCIENCES | K99 | 2020 | 0.076 |
| STATISTICAL MODELING OF NEURAL INFORMATION ENCODING | MASSACHUSETTS GENERAL HOSPITAL | K02 | 2003 | 0.073 |
| ANALYSIS OF HIPPOCAMPAL ENCODING OF BEHAVIORAL DECISIONS | WAKE FOREST UNIVERSITY HEALTH SCIENCES | R01 | 2004 | 0.073 |

**Cluster 12**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Identification of the Components of Frailty Using Administrative Data and Metabolite Profiling | BETH ISRAEL DEACONESS MEDICAL CENTER | K23 | 2020 | 0.041 |
| Using Causal Inference and Machine Learning Methods to Predict Cognitive Behavioral Treatment Response | BOSTON UNIVERSITY (CHARLES RIVER CAMPUS) | R21 | 2020 | 0.039 |
| Machine Learning and Personalized Prognosis for Depression Treatment | UNIVERSITY OF TEXAS, AUSTIN | R21 | 2017 | 0.038 |
| Building Multistage Treatment Regimens for Depression after Acute Coronary SyndromeSyndrome | COLUMBIA UNIVERSITY HEALTH SCIENCES | R21 | 2017 | 0.035 |
| Breath Volatile Metabolites for the Diagnosis of Emerging Invasive Mold Infection | BRIGHAM AND WOMEN'S HOSPITAL | K23 | 2016 | 0.034 |

**Cluster 13**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Structural and Semantic Cues for the Acquisition of Linguistic Regularties | UNIVERSITY OF WISCONSIN-MADISON | F31 | 2011 | 0.21 |
| Statistical Learning in Language Acquisition | UNIVERSITY OF WISCONSIN-MADISON | R37 | 2019 | 0.2 |
| Neurocognitive determinants of adolescent second language literacy development | HASKINS LABORATORIES, INC. | R01 | 2015 | 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 |
| Linking Language Comprehension to Production Patterns | UNIVERSITY OF WISCONSIN-MADISON | R01 | 2008 | 0.19 |

**Cluster 14**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Advanced approaches to protein structure prediction | UNIVERSITY OF MICHIGAN AT ANN ARBOR | R35 | 2020 | 0.18 |
| Distance-based ab initio protein structure prediction | UNIVERSITY OF MISSOURI-COLUMBIA | R01 | 2020 | 0.18 |
| Integrated Prediction of Protein Struture at 1D, 2D and 3D Levels | UNIVERSITY OF MISSOURI-COLUMBIA | R01 | 2013 | 0.18 |
| New Computational Methods for Data-driven Protein Structure Prediction | TOYOTA TECHNOLOGICAL INSTITUTE / CHICAGO | R01 | 2020 | 0.17 |
| Mining the Structural Genomics Pipeline | YALE UNIVERSITY | F32 | 2006 | 0.16 |

**Cluster 15**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 | 0.079 |
| Quantitative Methods for Neuroimaging Studies of Interventions in Aging | UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN | K25 | 2015 | 0.072 |
| Fetal Programming of Human Newborn Energy Homeostasis Brain Networks and Infant Adiposity | UNIVERSITY OF CALIFORNIA-IRVINE | K99 | 2020 | 0.07 |
| Motion Robust Mapping of Human Brain Functional Connectivity Changes in Utero | UNIVERSITY OF WASHINGTON | R01 | 2016 | 0.07 |
| C-PAC: A configurable, compute-optimized, cloud-enabled neuroimaging analysis software for reproducible translational and comparative | CHILD MIND INSTITUTE, INC. | R24 | 2020 | 0.065 |

**Cluster 16**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Deciphering the building blocks of hippocampal circuits | BAYLOR COLLEGE OF MEDICINE | R01 | 2020 | 0.13 |
| Single Cell Transcriptomic and Genetic Diversity by Single Molecule Long Read Sequencing | UNIVERSITY OF PENNSYLVANIA | R01 | 2020 | 0.13 |
| Defining cell types, lineage, and connectivity in developing human fetal cortex | UNIVERSITY OF CALIFORNIA LOS ANGELES | U01 | 2016 | 0.13 |
| Dissecting the mechanism of cell migration at the systems level | CARNEGIE-MELLON UNIVERSITY | R35 | 2020 | 0.13 |
| Systems Analysis of cell type differentiation in Xenopus development | HARVARD MEDICAL SCHOOL | R01 | 2020 | 0.12 |

**Cluster 17**

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| --- | --- | --- | --- | --- |
| 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 18**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Gene-Gene Interactions and Their Functional Roles in Prostate Cancer Aggressiveness | LSU HEALTH SCIENCES CENTER | R21 | 2017 | 0.088 |
| Visualization and Analysis of the TCGA Data Using the UCSC Cancer Genomics Browse | UNIVERSITY OF CALIFORNIA SANTA CRUZ | R21 | 2009 | 0.087 |
| Genetic & epigenetic analysis of angiogenesis genes in recurrent prostate cancer | H. LEE MOFFITT CANCER CTR & RES INST | R01 | 2012 | 0.086 |
| UCSC-Buck Inst. Genome Data Analysis Center for TCGA Research Network (GDAC) | UNIVERSITY OF CALIFORNIA SANTA CRUZ | U24 | 2016 | 0.085 |
| An integrated approach to dissect the functional network of large non-coding RNA | UNIVERSITY OF TX MD ANDERSON CAN CTR | R00 | 2017 | 0.083 |

**Cluster 19**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| iTransform: Wearable Biosensors to Detect the Evolution of Opioid Tolerance in Opioid Naïve Individuals | UNIV OF MASSACHUSETTS MED SCH WORCESTER | K23 | 2020 | 0.34 |
| Using Machine Learning to Predict Problematic Prescription Opioid Use and Opioid Overdose | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2019 | 0.32 |
| Telemedicine for Treatment of Opioid Use Disorder | HARVARD MEDICAL SCHOOL | R01 | 2020 | 0.3 |
| Real-time fMRI neurofeedback of large-scale network dynamics in opioid use disorder | YALE UNIVERSITY | R21 | 2020 | 0.3 |
| THE PRIMARY OBJECTIVE OF THE PROPOSED PHASE I WORK IS TO FURTHER DEVELOP A PROOF-OF-CONCEPT (POC) MACHINE LEARNING APPROACH TO DETECT ILLEGAL OPIOID SELLERS AND DEVELOP IT INTO AN MVP THAT CAN COLLEC | S-3 RESEARCH, LLC | N43 | 2019 | 0.29 |

**Cluster 20**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| ANALYSIS OF COMBINATORIAL CIS-REGULATION IN SYNTHETIC AND GENOMIC PROMOTER | WASHINGTON UNIVERSITY | R01 | 2015 | 0.083 |
| PROMOTERS | WASHINGTON UNIVERSITY | R01 | 2018 | 0.082 |
| Integrated multi-omics analyses of early mammalian craniofacial development | UNIVERSITY OF CONNECTICUT SCH OF MED/DNT | R03 | 2020 | 0.081 |
| "Ribonomics" of Gene Regulation to predict Innate Immune Responses | UNIVERSITY OF CALIFORNIA LOS ANGELES | U01 | 2017 | 0.075 |
| Learning Regulatory Drivers of Chromatin and Expression Dynamics during Nuclear Reprogramming | STANFORD UNIVERSITY | R01 | 2019 | 0.071 |

**Cluster 21**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 | 0.23 |
| Improving Diagnosis of Multiple Sclerosis Through the Integration of Novel Imaging and Laboratory Biomarkers | UNIVERSITY OF VERMONT & ST AGRIC COLLEGE | K02 | 2020 | 0.22 |
| Analysis of LC-MS data to identify peptide and glycan biomarkers for hepatocellul | GEORGETOWN UNIVERSITY | R01 | 2014 | 0.21 |
| Sequential Ion/Ion Reactions for Large Peptide and Whole Protein Characterization | UNIVERSITY OF WISCONSIN-MADISON | R01 | 2015 | 0.2 |
| Intelligent Aids for Proteomic Data Mining | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | K25 | 2008 | 0.2 |

**Cluster 22**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Cerebellar connectivity and error-based learning in infants at risk for autism | WASHINGTON UNIVERSITY | F31 | 2020 | 0.28 |
| 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 | 0.25 |
| Neural Correlates of Biological Motion Perception in Children with ASD | SEATTLE CHILDREN'S HOSPITAL | K01 | 2018 | 0.24 |

**Cluster 23**

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| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Development of clinical decision tools for management of diarrhea of children in high and low resource settings | UNIVERSITY OF UTAH | R01 | 2020 | 0.13 |
| A Computational Biomechanical Airway Model for Obese Children at Risk for OSAS | ALBERT EINSTEIN COLLEGE OF MEDICINE | R01 | 2020 | 0.12 |
| Multi-Site Validation Study of the HLHS Arrest Predictor | BAYLOR COLLEGE OF MEDICINE | R01 | 2020 | 0.12 |
| Effect of complex mixtures on oxidative stress and cognition in children | STATE UNIVERSITY OF NEW YORK AT BUFFALO | R01 | 2020 | 0.11 |
| Biomarker Discovery for Nonalcoholic Fatty Liver Disease in Children | EMORY UNIVERSITY | R01 | 2020 | 0.11 |

**Cluster 24**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 25**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 |
| Big Data Analysis of HIV Risk and Epidemiology in Sub-Saharan Africa | STANFORD UNIVERSITY | R01 | 2020 | 0.34 |
| NeuroAIDS in India | UNIVERSITY OF CALIFORNIA, SAN DIEGO | R01 | 2011 | 0.34 |
| Defining the impact of injection drug use on antiretroviral therapy and HIV treatment outcomes: an (epi)genomic approach | YALE UNIVERSITY | R01 | 2020 | 0.34 |

**Cluster 26**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 | 0.24 |
| Macro-vasculature: A Novel Image Biomarker of Lung Cance | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R01 | 2020 | 0.23 |
| Lung cancer in East Africa and the relationship to HIV-1 infection: epidemiology, molecular characterization and imaging | CASE WESTERN RESERVE UNIVERSITY | U54 | 2020 | 0.23 |
| Lung Screening: Efficacy versus Effectiveness | BROWN UNIVERSITY | R01 | 2020 | 0.22 |
| A diagnostic model for malignant pulmonary nodules | UNIVERSITY OF MARYLAND BALTIMORE | R21 | 2020 | 0.22 |

**Cluster 27**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 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 |
| Evaluation of Pain in Chronic Pancreatitis using the NAPS2 cohorts | UNIVERSITY OF PITTSBURGH AT PITTSBURGH | R21 | 2015 | 0.4 |
| Finding Good TEMporal PostOperative pain Signatures (TEMPOS) | UNIVERSITY OF FLORIDA | R01 | 2019 | 0.4 |
| Autonomous Pain Recognition in Non-Verbal and Critically Ill Patients | UNIVERSITY OF FLORIDA | R21 | 2020 | 0.4 |
| A Multimodal Approach for Monitoring Prolonged Acute Pain in Neonates | UNIVERSITY OF SOUTH FLORIDA | R21 | 2020 | 0.4 |

**Cluster 28**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| A systems analysis of drug tolerance in Mycobacterium tuberculosis | INSTITUTE FOR SYSTEMS BIOLOGY | R01 | 2020 | 0.17 |
| An Integrative Approach to Drug Repositioning Using Decision Tree Based Machine Learning | WEILL MEDICAL COLL OF CORNELL UNIV | F31 | 2020 | 0.17 |
| Detection of Potential Drug Effect Signals from Twitter Data | PURDUE UNIVERSITY | R15 | 2014 | 0.13 |
| 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 29**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Socioeconomic status, stress, and smoking cessation | UNIVERSITY OF UTAH | R01 | 2020 | 0.055 |
| Smartband/smartphone-based automatic smoking detection and real time mindfulness intervention | YALE UNIVERSITY | R34 | 2020 | 0.054 |
| A Customizable Real-Time Biosensor for Continuous Monitoring of Water Contaminants | QUANTITATIVE BIOSCIENCES, INC. | R43 | 2018 | 0.05 |
| The Development of a Noninvasive Monitoring System for Cigarette Smoking | UNIVERSITY OF ALABAMA IN TUSCALOOSA | R21 | 2011 | 0.045 |
| Eliminating Tobacco-Related Disparities amount African American Smokers | UNIVERSITY OF UTAH | R01 | 2020 | 0.044 |

**Cluster 30**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Clinically Relevant Genome Variation Database | STANFORD UNIVERSITY | U01 | 2016 | 0.12 |
| Deep learning methods to predict the function of genetic variants in orofacial clefts | UNIVERSITY OF TEXAS HLTH SCI CTR HOUSTON | R03 | 2019 | 0.1 |
| Approaches to Genetic Heterogeneity of Obstructive Sleep Apnea | UNIVERSITY OF PENNSYLVANIA | R01 | 2019 | 0.099 |
| Predicting causal non-coding variants in a founder population | STANFORD UNIVERSITY | R01 | 2017 | 0.099 |
| Statistical Tests for Mapping Genetic Determinants of Complex Traits | EMORY UNIVERSITY | R01 | 2019 | 0.092 |

**Cluster 31**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| MRI-Based Radiation Therapy Treatment Planning | STANFORD UNIVERSITY | R01 | 2020 | 0.11 |
| Multi-modal and Extreme PET/MRI Reconstruction Methods | UNIVERSITY OF CALIFORNIA, SAN FRANCISCO | F32 | 2020 | 0.097 |
| Improved Techniques for Substitute CT Generation from MRI datasets | UNIVERSITY OF WISCONSIN-MADISON | R01 | 2020 | 0.09 |
| Quantitative Low-Dose PET Imaging | YALE UNIVERSITY | R01 | 2020 | 0.082 |
| Simultaneous imaging of myocardial blood flow and glucose metabolism using dynamic 18F-FDG PET | UNIVERSITY OF CALIFORNIA AT DAVIS | R21 | 2017 | 0.074 |

**Cluster 32**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Biomarker panel to differentiate stroke from stroke mimic | PREDICTION SCIENCES, LLC | R43 | 2008 | 0.34 |
| Sleep apnea after stroke: Implications for screening and treatment | UNIVERSITY OF MICHIGAN AT ANN ARBOR | R01 | 2019 | 0.33 |
| Fast and Easy Assessment of Stroke | ALVA HEALTH, INC. | R43 | 2019 | 0.32 |
| 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 33**

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| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Open Health Natural Language Processing Collaboratory | MAYO CLINIC ROCHESTER | U01 | 2020 | 0.14 |
| Natural language processing for clinical and translational research | MAYO CLINIC ROCHESTER | R01 | 2016 | 0.13 |
| Annotation, development and evaluation for clinical information extraction | UNIVERSITY OF CALIFORNIA, SAN DIEGO | R01 | 2013 | 0.13 |
| Annotation, development and evaluation for clinical information extraction (transfer) | BOSTON CHILDREN'S HOSPITAL | R01 | 2013 | 0.13 |
| Encoding and Processing Patient Allergy Information in EHRs | BRIGHAM AND WOMEN'S HOSPITAL | R01 | 2016 | 0.12 |

**Cluster 34**

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| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| A Multisite Neurobehavioral Assessment of Fetal Alcohol Spectrum Disorders | SAN DIEGO STATE UNIVERSITY | U01 | 2020 | 0.27 |
| : Complex systems analysis of the impact of alcohol on bone in non-human primates | OREGON STATE UNIVERSITY | R01 | 2020 | 0.27 |
| Ambulatory assessment of alcohol use, mood dysregulation, and alcohol craving | UNIVERSITY OF MISSOURI-COLUMBIA | R21 | 2014 | 0.26 |
| Alcohol consumption monitoring via a power-free wearable biosensor | LOGICINK CORPORATION | R43 | 2018 | 0.26 |
| Alcohol Use: Nonlinearities in Intraindividual Variables | UNIVERSITY OF SOUTHERN CALIFORNIA | F31 | 2005 | 0.25 |

**Cluster 35**

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

**Cluster 36**

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| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| Signals of Epigenetic Modification in Sjogrens Syndrome | UNIVERSITY OF CALIFORNIA BERKELEY | F31 | 2018 | 0.16 |
| Defining Genomic Signatures for Aberrant DNA Methylation in Human Cancers | EMORY UNIVERSITY | R01 | 2013 | 0.15 |
| Identification of epigenetic subclones in lymphomas and leukemias | WASHINGTON UNIVERSITY | F30 | 2020 | 0.15 |
| Inferring gene regulatory circuitry from functional genomics data | COLUMBIA UNIV NEW YORK MORNINGSIDE | R01 | 2020 | 0.15 |
| Computational modeling of DNA methylation-mediated gene regulation | WASHINGTON UNIVERSITY | R01 | 2020 | 0.15 |

**Cluster 37**

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| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| INTELLIGENT CONTROL OF UPPER EXTREMITY NEURAL PROSTHESES | CLEVELAND CLINIC LERNER COL/MED-CWRU | R21 | 2006 | 0.079 |
| Human and Machine Learning for Customized Control of Assistive Robots | REHABILITATION INSTITUTE OF CHICAGO D/B/A SHIRLEY RYAN ABILITYLAB | R01 | 2019 | 0.076 |
| Motor Learning for the Control of an Assistive Device | REHABILITATION INSTITUTE OF CHICAGO D/B/A SHIRLEY RYAN ABILITYLAB | R21 | 2008 | 0.07 |
| Wrist/Grasp Muscle Activity Patterns for EMG-neural Interface Prosthesis Control | NORTHWESTERN UNIVERSITY | F31 | 2015 | 0.058 |
| Non-Invasive System for Identifying Neural Behavior | ALTEC, INC. | R01 | 2009 | 0.054 |

**Cluster 38**

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| 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 |
| Assessing ASL CBF as a biomarker for early Alzheimer's disease detection and disease progression | UNIVERSITY OF MARYLAND BALTIMORE | R01 | 2020 | 0.3 |
| 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 |
| 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 | 0.28 |

**Cluster 39**

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| Title | Awardee | Award Activity | Year | Sample Silhouette Score |
| FOUNDATION MODEL OF ANATOMY | UNIVERSITY OF WASHINGTON | R01 | 2002 | 0.0081 |
| MACE - Michigan Alliance for Cheminformatic Exploration | UNIVERSITY OF MICHIGAN | P20 | 2007 | 0.0074 |
| INTELLIGENT CRITIQUING OF CLINICAL-GUIDELINE APPLICATION | STANFORD UNIVERSITY | R01 | 2000 | 0.0048 |
| Bayesian Machine Learning Tools for Analyzing Microbiome Dynamics | BRIGHAM AND WOMEN'S HOSPITAL | R01 | 2020 | 0.0043 |
| Combining chemical and computational tools for predictive models of microbiome communities | UNIVERSITY OF PENNSYLVANIA | R35 | 2020 | 0.0032 |