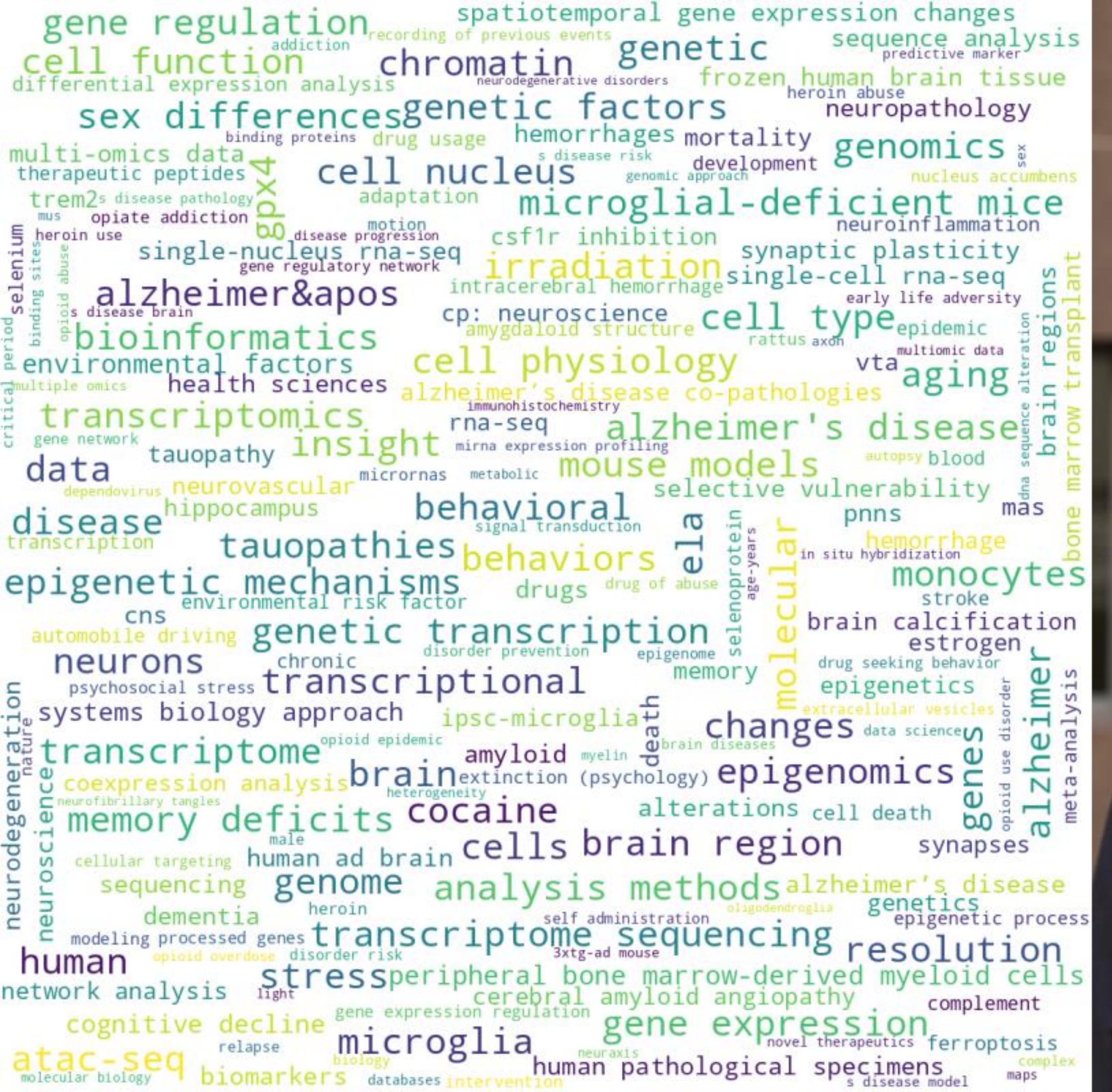


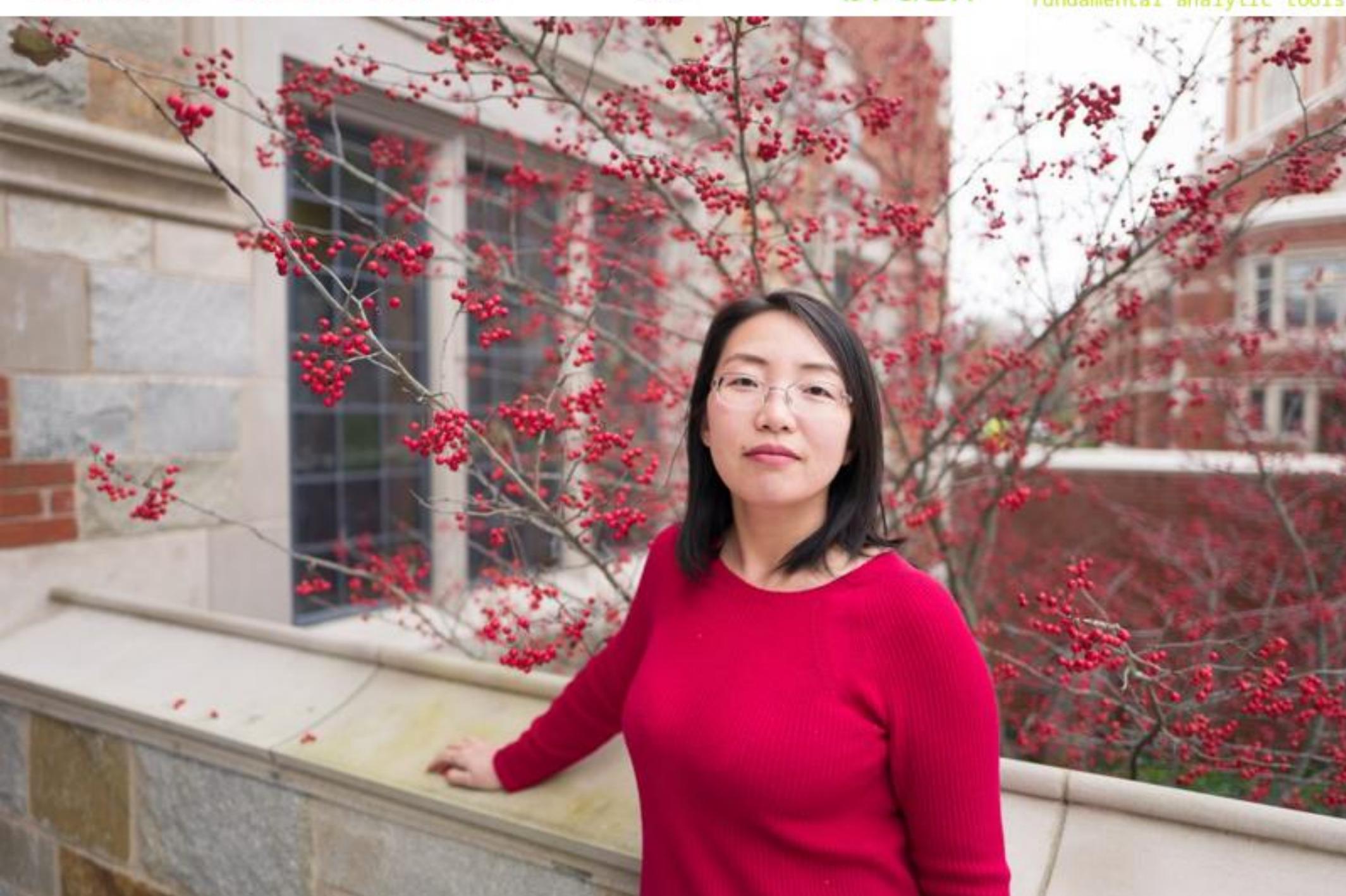
NEUROSCIENCE  
TRANSCRIPTIONAL  
TRANSCRIPTOME  
GENOMICS





# BOGI ANDERSEN@UCI

machine learning  
new therapeutic target  
interesting applications  
functional genomics  
genomics  
neuropsychiatric disorder  
cell type  
modeling  
transcriptomics  
molecular mechanisms  
nucleic acid  
resolution  
learning  
biological assay  
communities  
genomic profiles  
recent advances  
genetic  
human  
big data  
untranslated rna  
multiple omics  
genomic locus  
genetic variation  
binding  
gaussian model  
mentorship  
binding  
phenotype  
prefrontal cortex  
biophysics  
theory  
pfc  
variant impact quantification  
genetic risk  
genes  
psychiatric disorders  
disease  
psychiatric diagnosis  
biochemistry  
gene expression regulation  
chip-seq  
therapeutic target  
essential  
computer software  
comprehensive functional annotation  
regulatory sequences  
entropy  
data scientist  
epigenetic process  
chromatin  
genetic transcription  
biological process  
transcription factor  
genetic variant  
enhancers  
data  
genetic variant  
regulator genes  
enhancers  
maps  
insight  
computing methodologies  
pattern  
transcriptional regulation  
genomic data  
neurogenetics  
patients  
heritability  
epigenome  
regulatory element  
nonlinear partial differential equations  
nonlinear equations  
fundamental analytic tools  
community efforts  
distal cis-regulatory elements  
analytical methods  
development  
direction  
genes  
psychiatric disorders  
disease  
signal transduction  
comprehensive training program  
primary goal  
second order derivative  
noncoding genomic elements  
weak solution  
hull-strominger system  
multimodality  
chromatin  
genetic regulatory grammar  
project concerns investigations  
web services  
individuals  
estimate  
mathematics  
mean curvature flows  
kahler metric  
differential geometry  
physics  
universe  
universe  
population-scale epigenetics data  
transcriptional data  
proteins  
heterogeneity  
deep learning

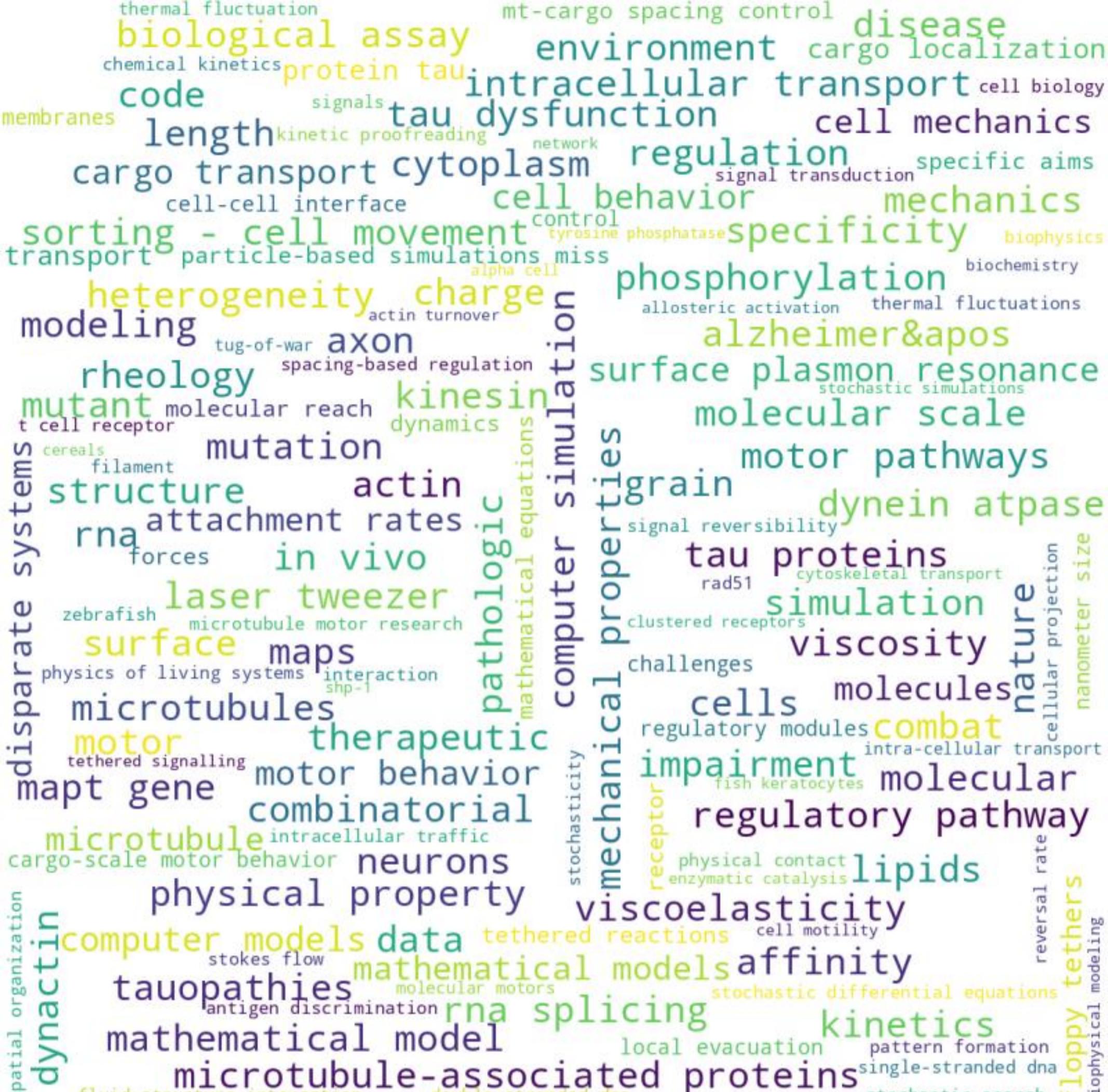


# JING ZHANG@UCI

dynamical systems slow phases  
patterns length double pulses  
solutions wide variety  
numerical results space dimension  
small-amplitude periodic orbit  
associated equations restriction operators  
vegetation patterns invasion fronts  
general class  
rolls limited water resources  
curves  
models nonorientable case  
large advection limit  
simulations nonlinear waves  
canard explosion  
bifurcation isolas pdes  
biological phenomena  
continuous transitions spike  
periodic bursting solutions small oscillations  
stripes slopes terrain regime  
unstable homogeneous state different branches  
geometric singular perturbation theory  
collaborators

scales algorithm parameter continuation

PAUL CARTER@UCI



# JUN ALLARD@UCI

# ALEJANDRA RODRIGUEZ-VERDUGO@UCI

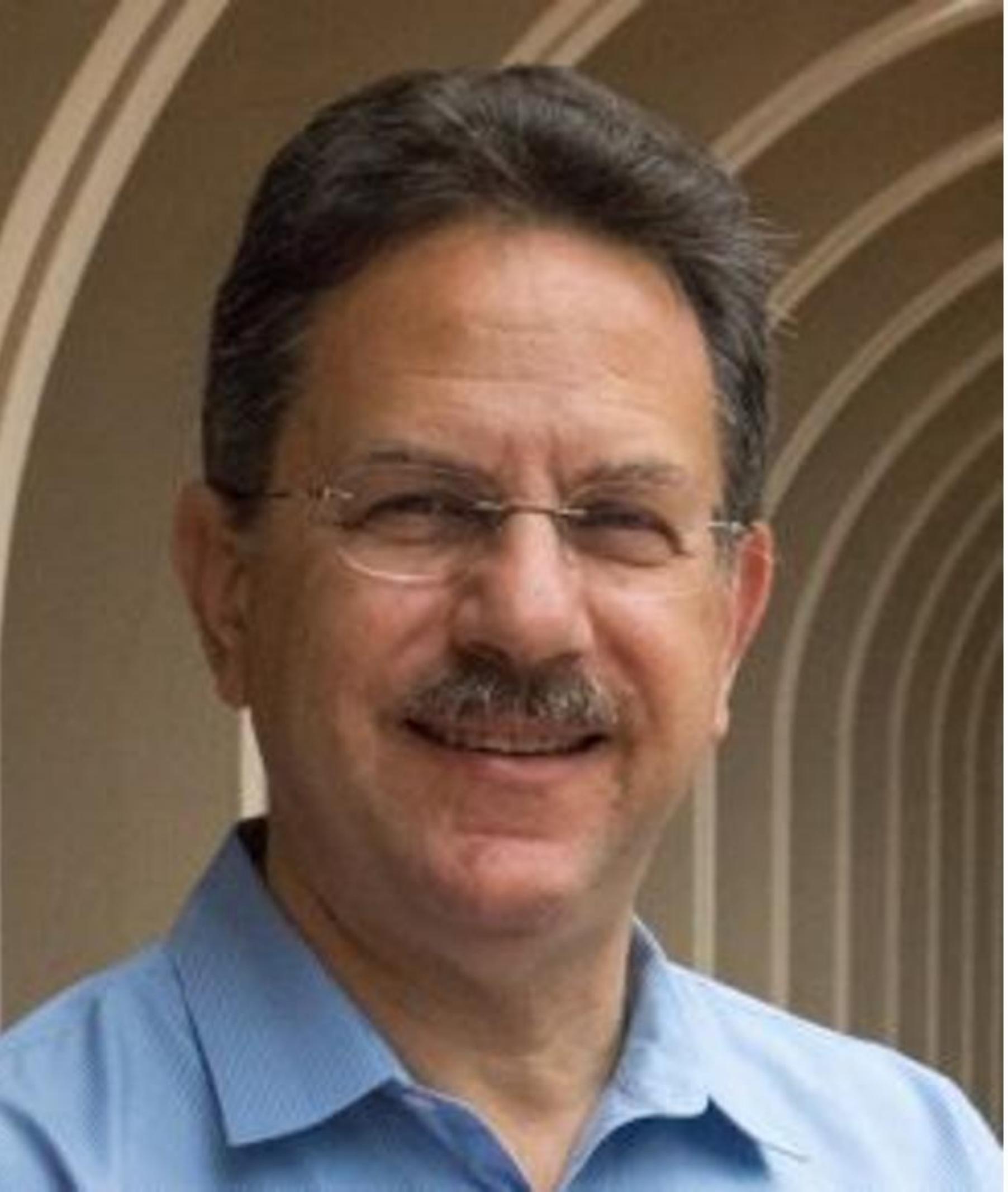
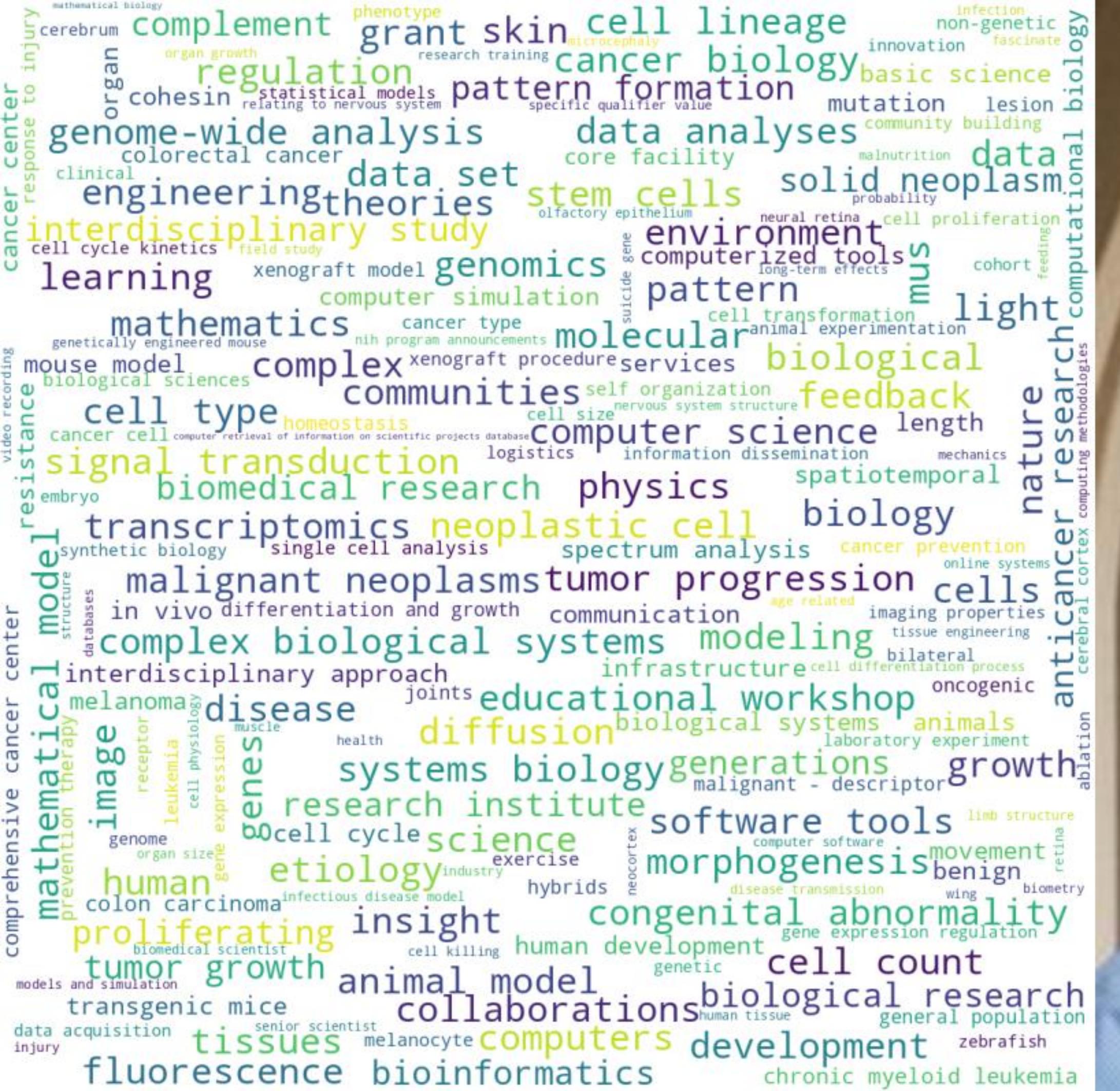
protein structure  
multiple beneficial mutations  
mathematics  
global change  
women representation  
secondary links  
additional motivation  
different time points  
phenotypic convergence  
science competition  
supportive environment  
climate warming  
temperature daily changes  
relative fitness  
rho gene expression  
course work necessary  
engineering parallel species  
antibiotic resistance  
critical instructional assistance  
laboratory instructors  
transcriptional terminator rho  
transcriptional termination  
microbiology adaptive mutations  
sem successful model program  
generations  
constant bacteria  
female roles  
escherichia fitness  
genes environmental trait  
commensalism  
adaptive pathways  
local high schools  
fields  
undergraduates growth  
female stability  
microbiology  
adaptive mutations  
secondary education  
species interactions  
extinct



IONIC



# ARTHUR LANDER@UCI



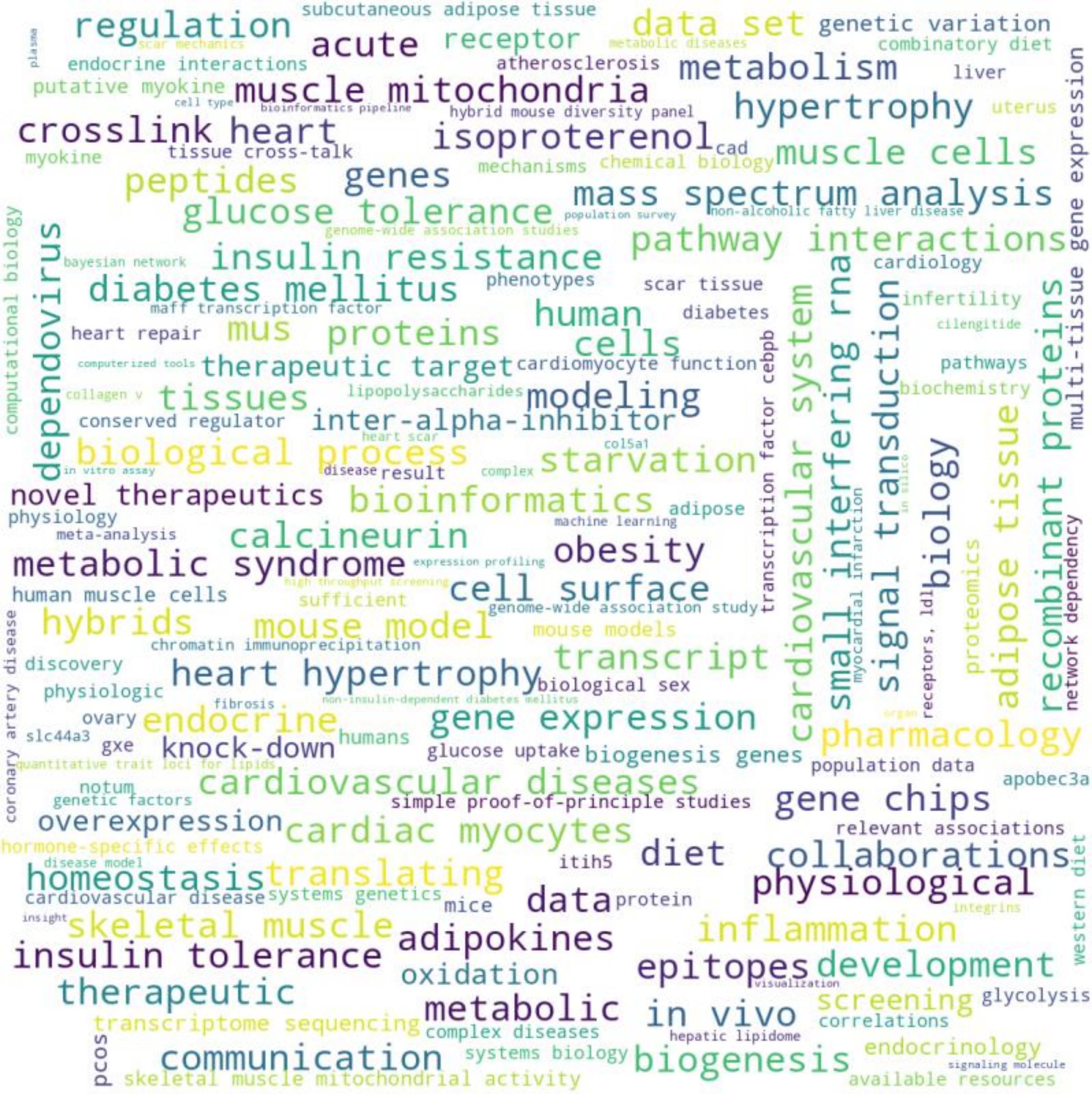


XIANGMIN XU@UCI

novel therapeutic intervention on-line distribution infection  
biomedical research development transmission process  
imaging properties robust complex biological systems  
cell communication chlamydial size  
pathogen signal transduction birth and death processes laboratory experiment  
background noise infectious disease theories reaction networks  
molecular chlamydia infections nf- $\kappa$ b  
multiple identical transcription factors chromatin remodeling communicable diseases  
chromatin remodeling computational biology  
bacteria computer science biological processes  
community building pattern formation intervention  
sexually transmitted diseases binding sites light  
three-week intensive course  
educational workshop optimal control nucleosome dynamics  
genome-wide analysis atac-seq communication stochastic model titrations  
interruption mathematical methods disease control mathematics mathematical modeling  
mathematical model inactive forms chromatin immunoprecipitation  
interdisciplinary approach uc irvine control  
membrane chlamydia genital infections signal-dependent transcription factor synthetic biology  
specificity nature genes absolute concentration robustness data set mathematical modeling  
interdisciplinary study deficiency zero ultrasensitivity morphology  
chlamydia trachomatis physics data set computer studies  
antibiotics disease proteins temporal measurement  
exercise infection receptor growth chlamydia cooperativity data additional preparation  
genital biology reticulate body basic mechanisms statistical models  
infrastructure stochastic noise multiscaling gene expression regulation stochastic optimization  
information dissemination engineering dna binding active form scaling limit  
generations genetic approach percolation protein site collaborations  
cohort time-dependent markov model data acquisition innovation therapeutic target  
software tools shadow enhancers rb size  
biological research chromosomes stochasticity vacuole chemical reaction networks  
intrinsic factor interdisciplinary biological gene expression  
noise complex d. melanogaster centers for disease control and prevention (u.s.)  
histone eviction cells morphogenesis biology  
complex centers for disease control and prevention (u.s.)  
affinity electron microscopy

# GERMAN ENCISO@UCI

# MARCUS SELDINGER @ UCI



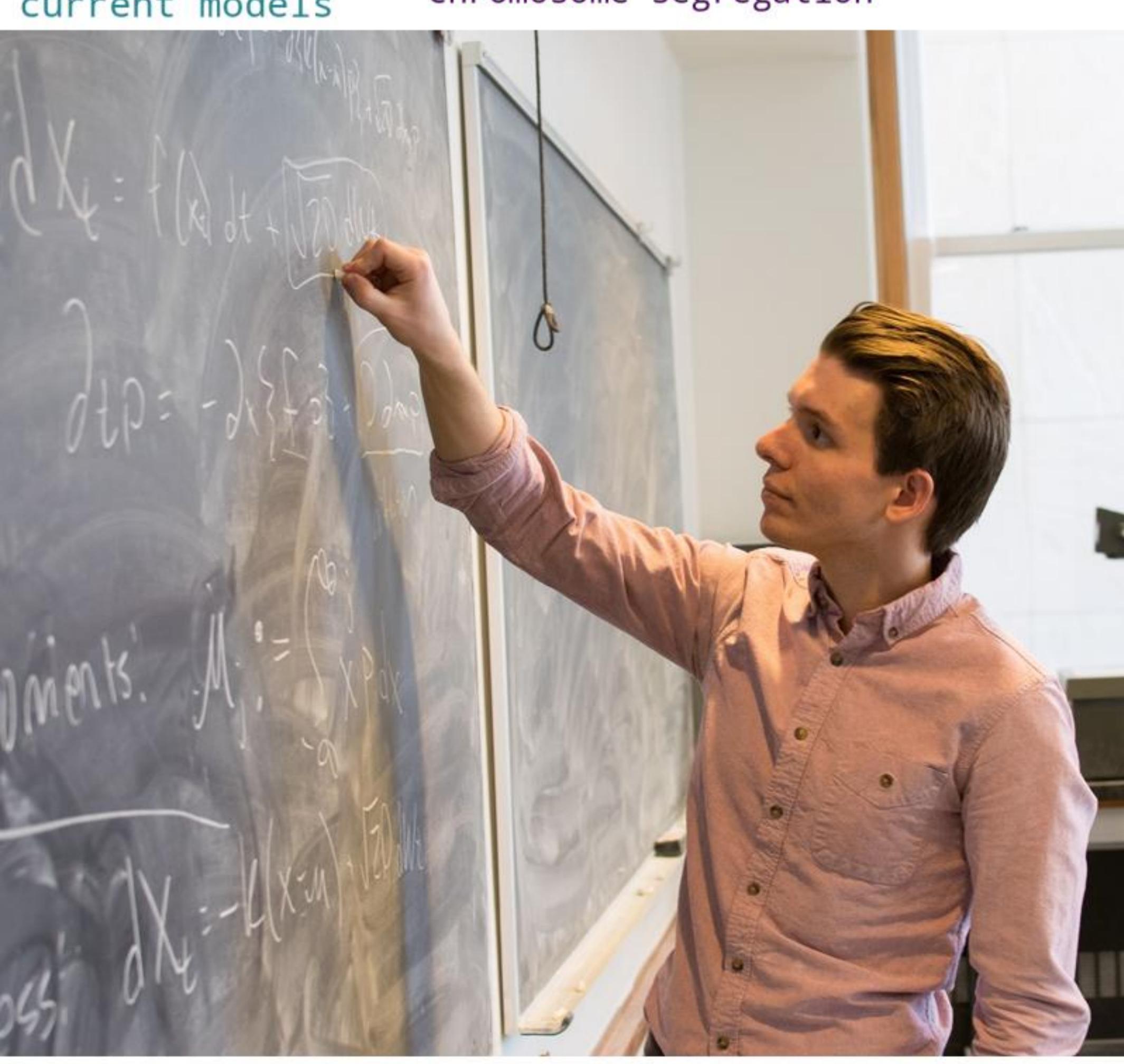
# MATILDA RESEARCH GROUP

genotype × environment interaction ageing  
physiology superoxide dismutase *drosophila melanogaster*  
stroke development consensus processes  
development rate stroke-lateral diffusion late life  
resistance transcriptome differentiation population genomics  
trade-off locomotion long-isolated laboratory populations urea  
controls senescence stress resistance desiccation  
rehabilitation forces antagonistic pleiotropy viability  
phosphoglucomutase fecundity stressful environments  
glycerol-3-phosphate dehydrogenase *drosophila*  
general theories healthspan paleo aging  
evolutionary developmental rate nutritional regimes  
botanical supplementation evolutionary genomics diet long-term evolution  
mortality rates core outcome set genomic levels  
stroke hamiltonian patterns correlated responses starvation heart robustness  
survival consensus *drosophila subobscura*  
aphasia growth rate life history genomic impact  
pleiotropy convergent evolution longevity  
different environments alcohol dehydrogenase experimental evolution  
functional response survival characters  
life-history traits aphasia treatment  
life history traits different populations

tissue microarray  
 in vivo regeneration  
 malignant - descriptor  
 molecular profiling  
 simulation  
 self-renewal  
 clinical  
 in vivo  
 heterogeneity  
 mesoderm  
 proliferating  
 medicine  
 insight  
 equilibrium  
 development  
 basal cell disease  
 overexpression  
 regulatory pathway  
 skin wound  
 zinc fingers  
 solid neoplasm  
 transplantation  
 signal transduction  
 complex  
 cancer etiology  
 biological process  
 atopic dermatitis  
 cancerous  
 skin disorder  
 cell fate control  
 wound healing  
 wound  
 skin  
 dermis  
 cancer therapy  
 mathematical model  
 somatic cell  
 actins  
 skin xenograft  
 stratum basale  
 cytoskeleton  
 cicatrix  
 positioning attribute  
 tumor progression  
 healing  
 interdisciplinary approach  
 interdisciplinary collaboration  
 hair follicle  
 puberty  
 organ  
 wound epidermis  
 chromatin  
 immunoprecipitation  
 spatiotemporal  
 neoplasm metastasis  
 embryonic development  
 genetic  
 protein structure function  
 neural crest  
 trait  
 trait  
 tissue regeneration  
 colony-forming units assay  
 immune fibrosis  
 xenograft model  
 morphogenesis  
 multi-scale modeling  
 migration  
 pluripotent stem cells  
 biological models  
 predictive modeling  
 gene expression  
 epithelial stem cell  
 epigenetic process  
 in vivo  
 knockout gene  
 phenotype  
 regulator genes  
 laboratory mouse  
 signal pathway  
 malignant neoplasms  
 healthcare  
 population heterogeneity  
 in vivo imaging  
 adult stem cell  
 knockout  
 network models  
 gene targeting  
 stem cell biology  
 biochemical  
 genetic signature  
 promoter  
 cell cycle  
 dermal  
 fluidity  
 pathologic  
 in vivo  
 reconstitution  
 binding  
 data set  
 distant metastasis  
 coculture techniques  
 grain  
 stemness  
 generations  
 computerized tools  
 epithelial  
 mammary gland  
 regenerative medicine  
 epithelial to mesenchymal transition  
 progenitor  
 cell line  
 loss of function  
 specificity  
 c-myc genes  
 hair follicle  
 puberty  
 injury  
 organ  
 wound  
 epidermis  
 chromatin  
 immunoprecipitation  
 spatiotemporal  
 neoplasm metastasis  
 embryonic development  
 genetic  
 protein structure function  
 neural crest  
 trait  
 trait  
 tissue regeneration  
 colony-forming units assay  
 immune fibrosis  
 xenograft model  
 morphogenesis  
 multi-scale modeling  
 migration  
 pluripotent stem cells  
 biological models  
 predictive modeling  
 gene expression  
 epithelial stem cell  
 epigenetic process  
**genes**  
 breast epithelial cells  
 fibroblasts  
 human  
 epiblast  
 keratinocyte  
 transitional cell  
 cell lineage  
 mammary epithelium  
 regenerative therapy  
 automobile driving  
 solid neoplasm  
 cancerous  
 skin disorder  
 cell fate control  
 skin regeneration  
 interdisciplinary collaboration  
 hair follicle  
 puberty  
 organ  
 wound epidermis  
 genetic  
 epithelium  
 single-cell rna sequencing  
 resolution  
 embryo future  
 cell differentiation  
 multipotent stem cells  
 pathologic processes  
 embryonic development  
 biological assay  
 light  
 genetic transcription  
 modeling  
 prospective  
 pregnancy  
 mutant  
 stem cells  
 healing  
 tumor progression  
 neural crest  
 trait  
 hair  
 mouse model  
 cell type  
 transcriptomics  
 stem cell therapy  
 tissue regeneration  
 colony-forming units assay  
 immune fibrosis  
 xenograft model  
 morphogenesis  
 multi-scale modeling  
 molecular target  
 stem cell fate  
 proto-oncogene proteins  
 c-myb  
 knock-down  
 animals  
 single cell analysis  
 inhibitor/antagonist  
 hair follicle structure  
 mammary gland development  
 genetically modified animals  
 gene expression  
 epithelial stem cell  
 epigenetic process  
**regenerative**  
 homeostasis  
 process  
 cell differentiation  
 hybrids  
 subgout  
 candidate disease gene

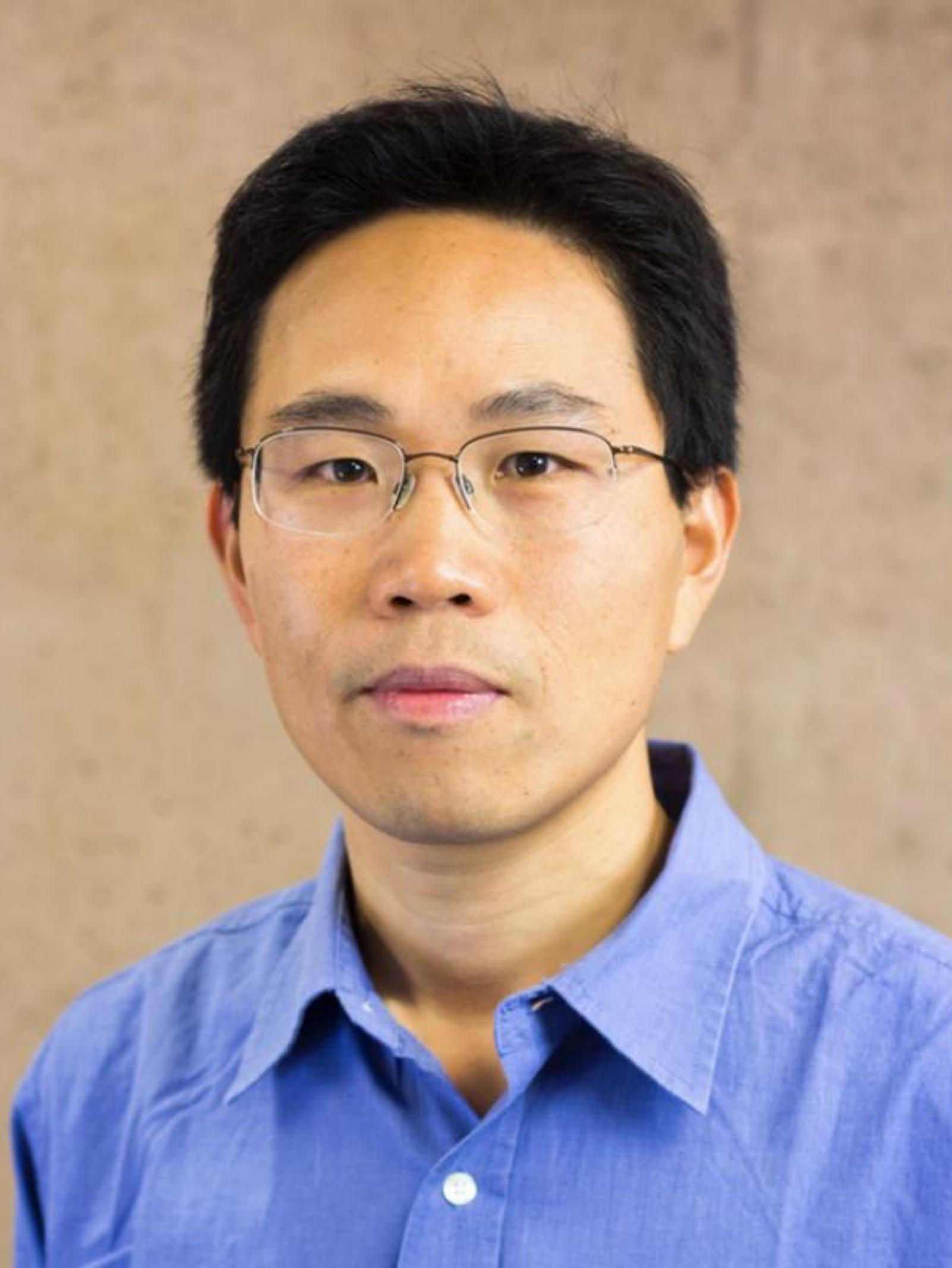
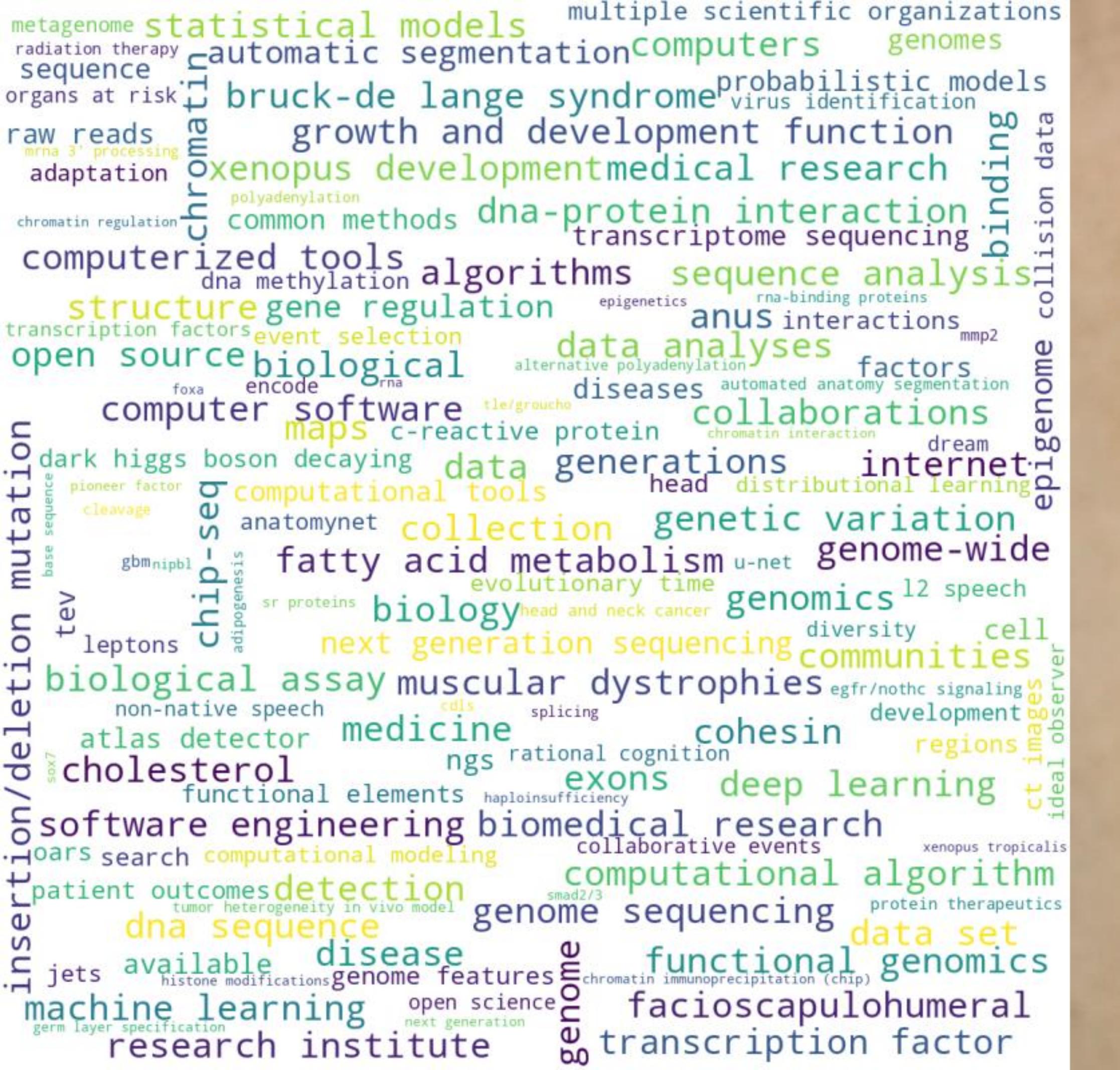


variety	<i>hypothesis patterns</i>	<i>deterministic process</i>
	<i>torque</i>	<i>centrosomes</i>
	<i>intracellular mechanics</i>	<i>opposite spindle poles</i>
	<i>k-fibers</i>	<i>momentous molecular motor-driven interactions</i>
	<i>spindle assembly</i>	<i>mechanical torque promotes bipolarity</i>
	<i>cellular organization</i>	
	<i>proper segregation</i>	<i>interactions</i>
	<i>mitotic spindle</i>	<i>kinetochores</i>
		<i>locations</i>
		<i>non-centrosomal microtubules</i>
	<i>amphitelic attachment</i>	<i>formation</i>
	<i>spatial dynamics</i>	<i>computational model</i>
	<i>uncoordinated sequential attachments</i>	
	<i>rapid chromosome biorientation</i>	
		<i>motor proteins</i>
	<i>intracellular forces</i>	
	<i>multi-centrosomal clustering</i>	
		<i>center</i>
	<i>centrosome-centromere vector</i>	
	<i>specific stage</i>	<i>kinetochore</i>
	<i>collective behavior</i>	
	<i>changes</i>	<i>dynein</i>
	<i>distinct</i>	
	<i>domain</i>	<i>temporal</i>
example		
		<i>agent-based simulation</i>
	<i>mitosis</i>	<i>orientations</i>
	<i>dynamic</i>	<i>perpendicular</i>
	<i>microtubule filaments</i>	
		<i>molecular motors</i>
		<i>cenpe</i>
		<i>structural analyses</i>
		<i>chromosome segregation</i>
current models		



CHRIS MILES@UCI

# EXPLORING THE GENOME



human data  
aging brain  
animal model  
mild cognitive impairment  
perfervant pathway  
brain imaging  
episodic memory  
neurocognitive  
behavioral  
mild neurocognitive impairment  
neuropsychological tests  
mri

aging learning  
memory disorders  
mnemonic discrimination  
hippocampus (brain)  
relating to nervous system  
data sharing  
biological models  
nature  
neuroimaging  
neurobiology  
medial age effect  
physiological aging  
diffusion  
disease  
innovation  
functional magnetic resonance imaging  
impaired cognition  
impairment pre-clinical  
biological assay  
neuropsychological

intervention  
behavior test  
classical conditioning  
object recognition  
memory impairment  
health  
diagnosis  
insight  
amyloid beta-42  
morphometry  
metabolic  
middle age  
brain region  
video games  
patients  
environment  
pathologic neurites  
alzheimer&apos  
prefrontal cortex  
aging-related process  
physiology  
genotype  
behavioral assay  
cognitive function  
parietal lobe  
nonhuman primate  
hyperactive behavior  
white matter  
executive function  
spectroscopy  
classification  
data management  
cognitive change  
cellular structures  
huntington disease  
treatment effectiveness  
pattern separation  
data collection  
age group  
age related  
resolution  
behavior measurement  
neuropsychology  
rodent model  
pathology  
habits  
spectroscopic imaging  
age-associated memory  
impairment  
signal transduction  
schizophrenia  
pathology  
habit  
age group  
age related  
dentate gyrus  
genetic markers  
biological markers  
genetic predisposition to disease  
dementia  
cells  
flexibility  
development  
vascular dementia  
neurophysiology  
hippocampus  
neurons  
therapy development  
age difference  
cognitive testing  
entorhinal cortex

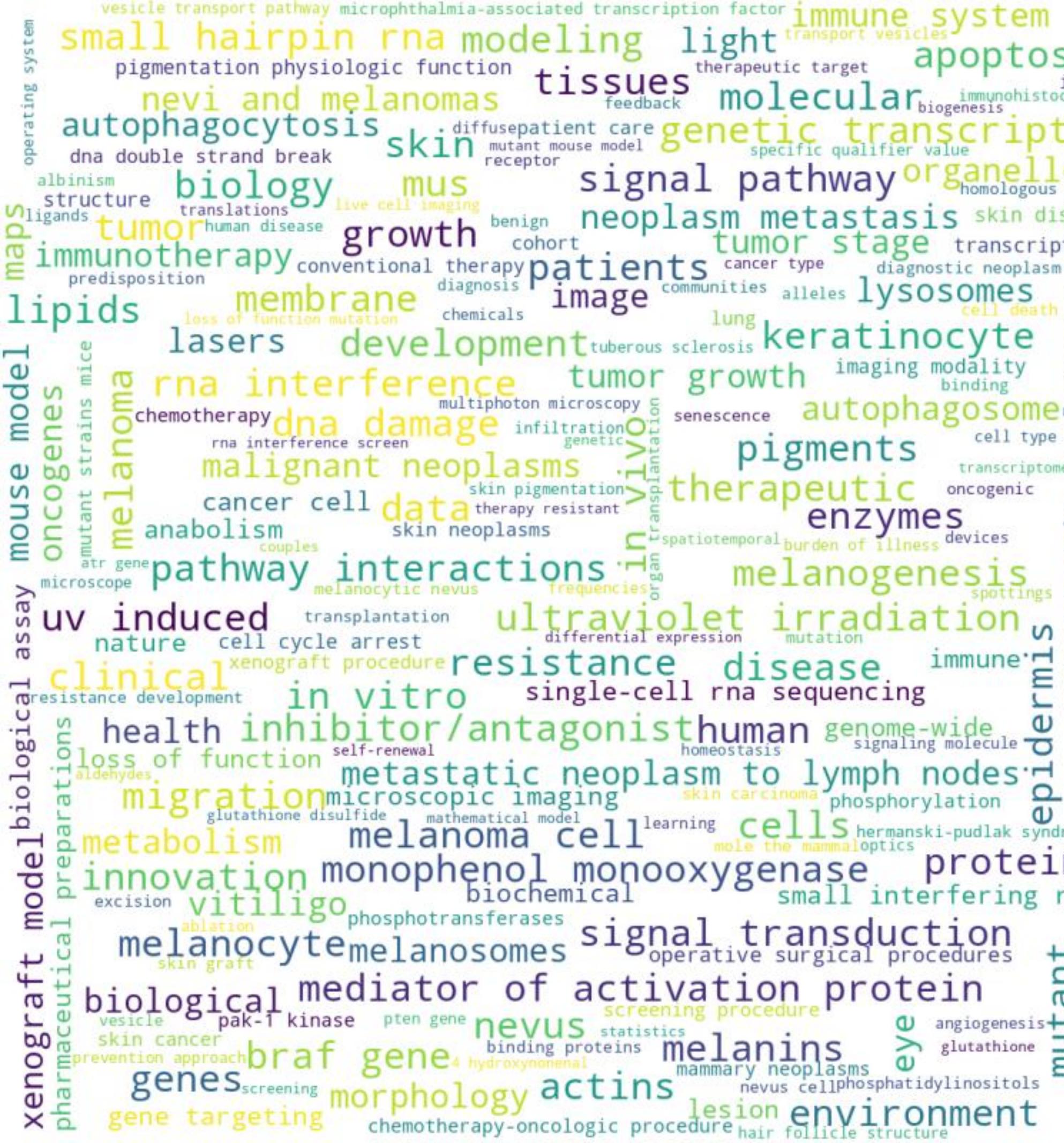
temporal lobe  
communication  
environmental enrichment  
future  
parkinson disease  
international  
data analyses  
induced pluripotent stem cell  
positron-emission tomography  
behavioral genetics  
genetic  
clinical  
monkeys  
liquid substance  
tau proteins  
attention deficit disorder  
social work  
neuroinflammation  
alleles  
down syndrome  
scanning  
noodi statistics  
corpus striatum structure  
mri scans

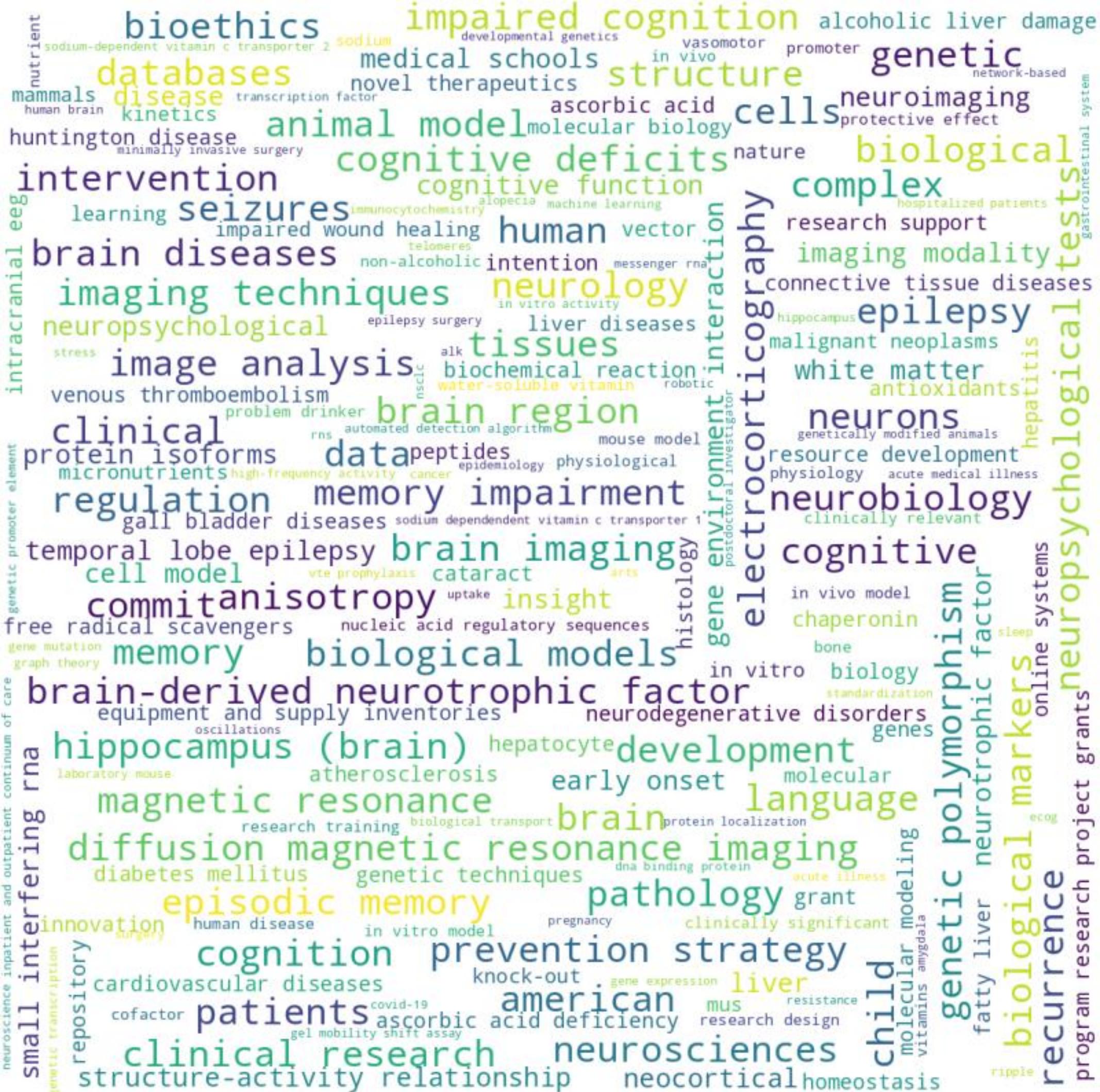
histologic  
motor learning  
light etiology  
neural correlate  
generations genetic risk  
fiber  
imaging modality  
signal transduction  
cerebrospinal fluid  
physiology  
mri scans



CRAIG STARK@UCI

# ANAND GANESAN@UIC





# JACK LIN@UCI



# CHOLSOON JANG@UCI

branchial arch structure hypertrophy human mutant strains mice embryonic development joint injury feeds neurogenesis  
tendinopathy skeletal development head binding ectoderm skeleton exercise exercise  
vertebrates future membrane glycoproteins tendinopathy craniofacial human stem cells extracellular matrix proteins cell type movement heterotopic ossification  
development integrins head binding ectoderm skeleton exercise  
tretinoïn biological signal transduction integrins overexpression cell type movement heterotopic ossification  
physiological cadherins ursidae family mus transcription factor mesenchymal stem cells optics  
image tendon injuries nuclear receptors mechanical force protein deficiency inhibitor/antagonist mutant  
gene function skeletogenesis fibroblasts orbital separation excessive ephrins pattern cranium  
malformation temporomandibular joint zebrafish maps morphogens  
joint formation scleraxis embryo thrombospondins bone epithelium birds  
cartilage cell filopodia neural crest growth factor pharmacology progenitor  
zebrafish chondrogenesis limb structure cichlids cephalic cell transplantation developmental genetics  
congenital abnormality cilia  
chondrogenesis extracellular matrix craniofacial development phenotype regulation mesoderm  
genetic manipulation cichlids cephalic fluorescence planar cell polarity  
morphogenesis phenotypic variation acell motility modeling cell fate specification  
atrophic diagnostic cell communication binding proteins specific qualifier value imaging genetics  
cell communication cell behavior physical condensation mesoderm  
complement phenotypic variation gene expression profile gene expression profile cell fate specification  
biological models comparative study signal transduction wnt signaling pathway mandible  
insight gene mutation neural crest cell growth ligaments genetic in vivo couples  
neural crest cell epiphysial cartilage fly transgenic organisms spatial distribution data  
in vitro cells skeletal system mechanical load gene expression cartilage development tendon development  
endothelin-1 tendon structure gene expression gene expression morphology elasticity  
joints disease organ hindbrain molecular biological assay physiologic ossification  
animals clinical disease neuraxis quantitative trait loci mutation fatty acid glycerol esters  
stem cell diagnosis larva retinoids signal pathway malignant neoplasms genes connective tissue  
candidate disease gene structure dorsal muscledrosophila genus ligands skeletal anterior



THOMAS SCHILLING@UCI



NAOMI CHESLER@UCI

# DOMINIK MARDAR



lysosome data preventive intervention zebrafish model  
phagophore therapeutic intervention taxonomy membrane  
plants dynamic remodeling non-hodgkin's lymphoma developmental diseases  
abstract hedgehog signals preventive screening greater efficacy  
cancer abstract hedgehog signals preventive screening greater efficacy  
cancer  
mutation insight SMO platinum developmental disease  
smoothened signaling pathway modeling des cases  
taxonomic update algorithms antidiote mutant distal appendages  
autophagosome disco components cep90 therapeutic  
receptors knock-out tight junction proteins maps patients  
stem cells stress magnetic resonance imaging human metabolites particle  
mesenchymal structure ifts species heterogeneity phylum negarnaviricota  
tongue base families resolution optics nanometer resolution  
molecular cyanide  
tongue base families resolution optics nanometer resolution  
large orders bonyvirales frequencies movement  
whole plant biology nanotopography  
binding sites malignant neoplasms trafficking  
protein-protein interaction cilia tight junction proteins disease  
image centrioles vacuole stroke recurrence ebv  
spatiotemporal lc3 phenotypic screening cells docking structural biology  
storm microscopy peripheral t cell lymphoma protein protein interaction  
molecular mechanisms basal cell carcinoma cytosolic complex hpv  
homeostasis ebv status regulation modulation ecology  
embryo doxorubicin-induced cardiomyopathy tissues neurodegeneration  
isr previous studies diffuse large b-cell lymphoma active biological transport  
novel therapeutics pattern photoconversion imaging  
plant physiology reconstruction signaling molecule phenologies

XIAOYU SHI@UCI

bacterial community difficult genetic resistance gene health  
ecology view spatiotemporal  
larval zebrafish microbiome engineering molecular  
bacteriophages physical shape physiology  
signal pathway spatial fighting cells hypothesis shapes microbiomes  
agents collection transmission process specific genetic pathways  
molecular scale bacteria cell physiology  
sos response wellbeing temporal organization  
lateral gene transfer complex son of sevenless proteins disease  
attention memory animals beneficial microbes  
bacterial resistance example movement human  
ciprofloxacin tissues bacterial antibiotic resistance host-microbe systems biology  
pharmaceutical preparations biological models  
risk factor microbial trait nature ecology-based strategies  
bacteria new strategies pathway interactions dna damage  
horizontal gene transfer physiological landscape innovation acquisition  
drug development livestock future microbial ecology  
host-microbe interactions bacterial swimming motility modeling  
in situ bacterial communities antibiotics synthetic biology  
physical structure antibiotic resistance cell motility  
combating antibiotic resistant bacteria project summary antibiotic resistant bacteria  
gut microbiome disease-causing pathogens motivation resistance  
food supply swimming humans pathogen environment  
mice mus structure image scales ecosystem complex mechanisms  
genetic engineering evolution human health plasmids  
dose current approaches host-to-host transmission effective antibiotics  
intestines therapeutic space mobile genetic elements optics  
therapeutic side effect microbial transmission de novo mutation solution  
resolution microbiota  
agriculture microbiome  
zebrafish



TRAVIS WILES@UCI

metabolic collection infectious skin diseases enzymes metabolic pathway  
 gram-negative bacteria microbial biofilms novel therapeutics physical science  
 host cell types fermentation insight skin 11-37 antibiotic therapy malignant neoplasms  
 cellular biology microscopy virulence factors next generation blind stimulus  
 diabetic comparative cell wall fluid flow atomic force microscopy non-diabetic  
 histones infection nature gene repression clinical data healthcare immunology  
 histone modification assessment patients pilum nadh signal transduction pathway  
 standardization abnormality assessment diabetic mouse lifetime imaging mechanical stimulation  
 histone role carbohydrate metabolism patients antimicrobial peptides supplementation membrane  
 histones carbon fluorescence potent antimicrobial synergy adhesions cathelicidin  
 physiology metabolism patients mus common bacteria chronic wound etiology  
 metabolism mortality shear stress growth antimicrobial peptides supplementation approach  
 attention whole organism communities immunocompromised host novel diagnostics  
 chronic human hospitals wound employee strikes chronic infection  
 pseudomonas aeruginosa antimicrobial mechanism synergism effective treatment scaffold skin wound  
 antimicrobial peptide biomedical engineering virulence activation regulation  
 therapeutic pre-clinical antibiotics cystic fibrosis patients cessation of life pyocyanine  
 therapeutic genetic transcription antimicrobials cell communication microfluidic microchips immune  
 biological assay fluorescence pyoverdin in vitro assay in vivo assay  
 methicillin resistant staphylococcus aureus virulent genes caenorhabditis elegans soft tissue  
 cell motility colonization microarray analysis antimicrobial activities cell communication  
 engineering in vivo environment mouse model biofilm formation in vitro assay  
 data histone h2a in vivo environment acute infection multi-drug resistance extracellular  
 microbiology overexpression virulent genes soft tissue infections image swimming  
 records nutrient pathogen future mechanics molecular biology neutrophil  
 mammalian cell cell surface flim in vitro host killings inhibitor/antagonist  
 resistant strain gene expression virulence signal transduction tissues  
 gene expression laser tweezers human pathogen adhesion forces liquid substance  
 quorum sensing interdisciplinary approach pathway interactions  
 neutrophil extracellular traps combat pneumonia  
 chemicals bactericide bacterial pathogens innovation morbidity - disease rate  
 diabetes mellitus oxidation bacterial antibiotic resistance  
 interdisciplinarity study animal model



ALBERT SIRYAPORN@UCI

# NATALIA KOMAROVACU

A word cloud visualization representing research interests and concepts in mathematical biology and cancer modeling. The words are colored by category, and some have small text below them indicating specific sub-topics or sources.

**Key themes include:**

- Theory:** evolutionary theory, mathematical models, computer simulation, mathematical modeling, randomness, asexual populations, fitness valley crossing, mathematical modeling of cancer.
- Development:** development, epigenetic process, mathematical analyses, genes, gene silencing, network models, spatial population dynamics.
- Disease:** cancer, oncogenes, tumor-suppressor genes, mutations, sars-cov-2, virus dynamics, light, point mutation, cell division, cell aging, phenotype, chromosomal loss, carcinogenesis, aspirin, stochastic process, malignant neoplasms, tumor progression, kinetics, somatic evolution, advanced adenoma.
- Genetics:** genetic, patients, hand, multiple virus, colon cancer, social distancing, cultural evolution, fixation probability, homeostasis regulation recombination, neutrality, in vitro, death, damage repair.
- Computational:** cell dynamics, cell lines, demographic transition, axiomatic modeling, different mutant types, computer simulations, ode modeling, tumour evolution, spatial dynamics, categorization, rate, spatial population dynamics.
- Mathematical:** mathematical model, mathematical models, systems biology, mutator phenotype, evolutionary dynamics, fragmentation, plateaus, large mathematical literature, agent-based models, spatial dynamics, applicable, community, music evolution, hematopoietic disease, concepts, learner, frequency matching, frequency boosting.
- Biological:** cell, cell-to-cell transmission, stem cells, learning, computational, stem cell lineages, power law, power law, reinforcement, regions, language regularization, hot zones, reinforcement, transmission, cancer.
- Evolutionary:** evolutionary dynamics, fragmentation, growth laws, cobra, mechanisms, fitness valley, multiplicity of infection, gastrointestinal cancers, epidemiology, multiple infection, learning, fitness valley crossing, mathematical modeling of cancer.
- Cancer:** cancer, progression, checkpoints, growth laws, cobra, mechanisms, fitness valley, multiplicity of infection, gastrointestinal cancers, epidemiology, multiple infection, learning, fitness valley crossing, mathematical modeling of cancer.
- Computational:** cell dynamics, cell lines, demographic transition, axiomatic modeling, different mutant types, computer simulations, ode modeling, tumour evolution, spatial dynamics, categorization, rate, spatial population dynamics.
- Mathematical:** mathematical model, mathematical models, systems biology, mutator phenotype, evolutionary dynamics, fragmentation, plateaus, large mathematical literature, agent-based models, spatial dynamics, applicable, community, music evolution, hematopoietic disease, concepts, learner, frequency matching, frequency boosting.
- Biological:** cell, cell-to-cell transmission, stem cells, learning, computational, stem cell lineages, power law, power law, reinforcement, regions, language regularization, hot zones, reinforcement, transmission, cancer.
- Evolutionary:** evolutionary dynamics, fragmentation, growth laws, cobra, mechanisms, fitness valley, multiplicity of infection, gastrointestinal cancers, epidemiology, multiple infection, learning, fitness valley crossing, mathematical modeling of cancer.
- Cancer:** cancer, progression, checkpoints, growth laws, cobra, mechanisms, fitness valley, multiplicity of infection, gastrointestinal cancers, epidemiology, multiple infection, learning, fitness valley crossing, mathematical modeling of cancer.

dynamic simulation  
cyclization control monodisperse fatty acid synthases ast deaths  
computational studies fatty acid nature early kidney involvement necessary mechanism  
fatty acid atom replacement furans computer networks polyketide onset threshold for droplet ejection single cancers pulmonary (inhalation) drug delivery.  
enzymology enzymology speed-up ratios directed biosynthesis  
chronic diseases aflatoxin cohort fatty acid synthase ultrasonic nebulizer patients  
general theory strained rings non-ribosomal peptide life years mortality chronic kidney diseases  
mobile natural product dynamic assignment molecular dynamics multiple fourier horns (mfh)  
rate control diabetes ketoreductase interactions computation biology  
pkss structures life expectancy sensitivity clogging free sudden large disturbance structural biology  
degarelix faraday waves qos different health risks  
result disease-specific survival seer stability  
heterocycles gradient projection ultrasonic micro droplet generator  
angiosarcoma polydisperse clinical outcomes  
polyketide mimetics disease severity hazard ratio  
flow control protocols integrated ultrasonic nebulizer polyketides oxetanes

**SHERYL TSAI@UCI**

nfatc1 cpg site em algorithm variable selection  
heterogeneous components efficient computational tools  
nuclear factor psychopathology  
high-dimensional dna methylation mediators  
structural equation modeling dna methylation  
prolonged course prediction accuracy  
biomedical information ptss  
high-dimensional mediation analysis  
algorithms social networks nfatc1  
subgroup identification new statistical methods  
heterogeneous epigenetic effects  
general population significant impacts  
integrated program trauma types  
dependence relations  
innovative statistical machine learning methods data  
hyperlink prediction structures  
high heterogeneity glucocorticoid receptor  
new model medical imaging  
environmental studies networks  
nsf ptsd health care  
mixture model foundation  
post-traumatic stress disorder  
collaborative research methylcytosine  
design practical methods causality  
joint significant test  
broader impacts review criteria epigenetics

# ANNIE QU@UCI

# ONC@BROWN ENGINEERING



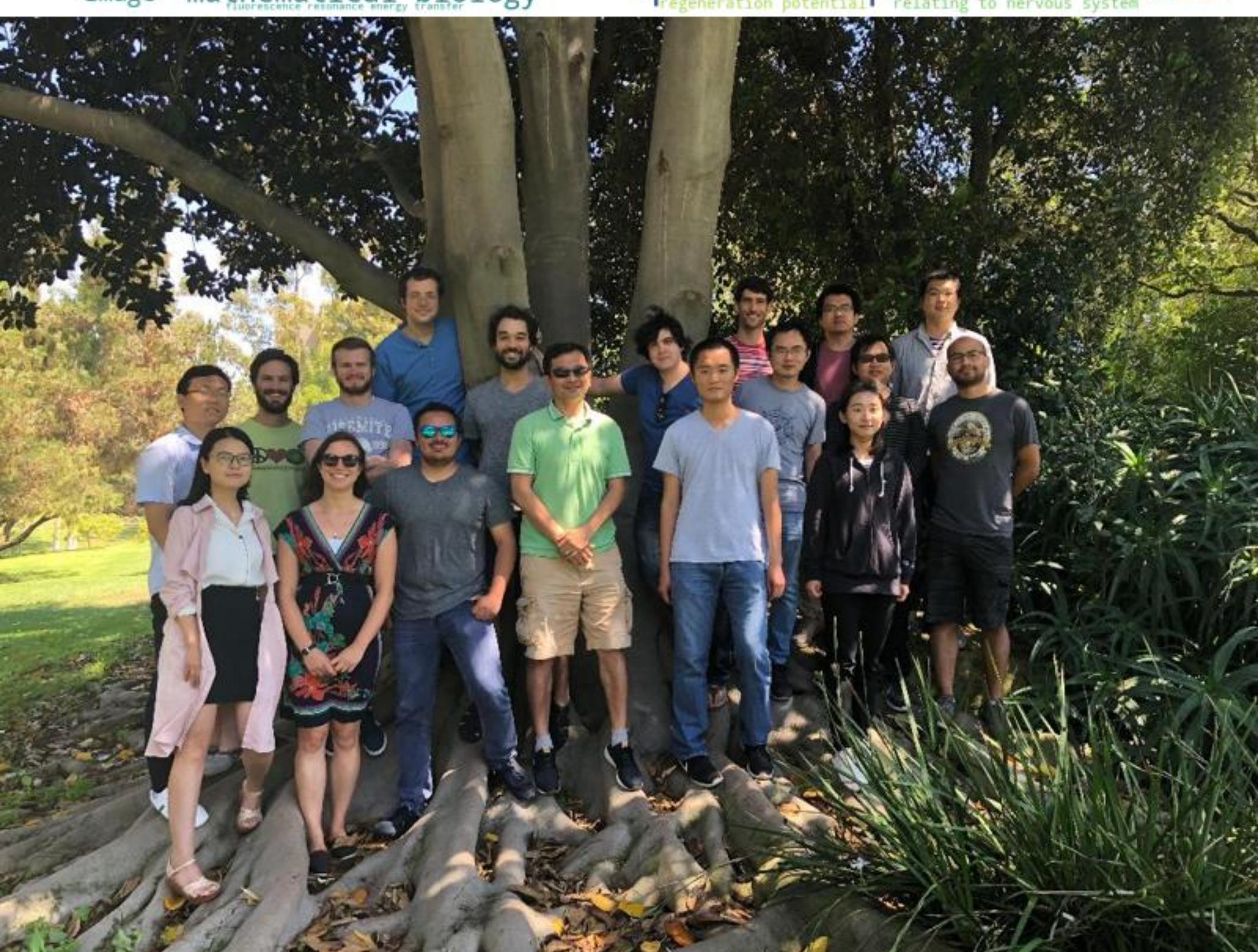
# MICHAEL YASSASCU



interdisciplinary collaboration  
genetically engineered mouse  
injury  
loss of function  
molecular  
tissues

tretinoin  
wound  
microcephaly  
organ size  
learning  
cell type  
simulation  
cell separation  
proteins  
coculture techniques  
fibroblasts  
cell lineage  
theories  
complex  
memory  
tumorigenesis  
anterior  
regenerative research  
computerized tools  
signal pathway  
animal experimentation  
grain feeding  
wound epidermis  
hair follicle structure  
epidermis  
computer simulation  
zebrafish  
resistance  
cerebral cortex  
embryo  
attenuated  
models and simulation  
regenerative  
research  
tissue engineering  
diffuse  
gene regulatory network  
length  
pattern  
automobile driving  
epiphysins  
hair  
transcriptomics  
candidate disease gene  
skin xenograft  
biology  
retina  
cellular morphology  
cell size  
bilateral  
organ growth  
mathematical model  
gene expression profile  
specificity  
single cell analysis  
pathway interactions  
clinical  
engineering

immune  
cicatrix  
growth factor  
cell count  
etiology  
neural retina  
retinoids  
reconstitution  
disease  
solid neoplasm  
receptor binding  
mutant  
molecular profiling  
mouse model  
infection  
reaction  
genomics  
cell cycle kinetics  
network models  
transgenic mice  
mechanics  
network models  
regulatory pathway  
medicine  
feedback  
medicine  
noise  
regenerator  
genes  
mathematics  
growth  
regenerative  
medicine  
tissue regeneration  
communication  
injury and repair  
computer analysis  
malignant neoplasms  
future  
wing  
generic drugs  
fascinate  
mammals  
suicide gene  
regeneration  
natural regeneration  
spatiotemporal  
morphogenesis  
regenerative therapy  
acute promyelocytic leukemia  
healthcare  
long-term effects  
adult stem cell  
ablation  
cancer therapy  
organ  
light  
limb structure  
systems biology  
transcription factor  
cell cycle  
cell killing  
transcriptional reprogramming  
specific qualifier value  
regeneration potential  
relating to nervous system



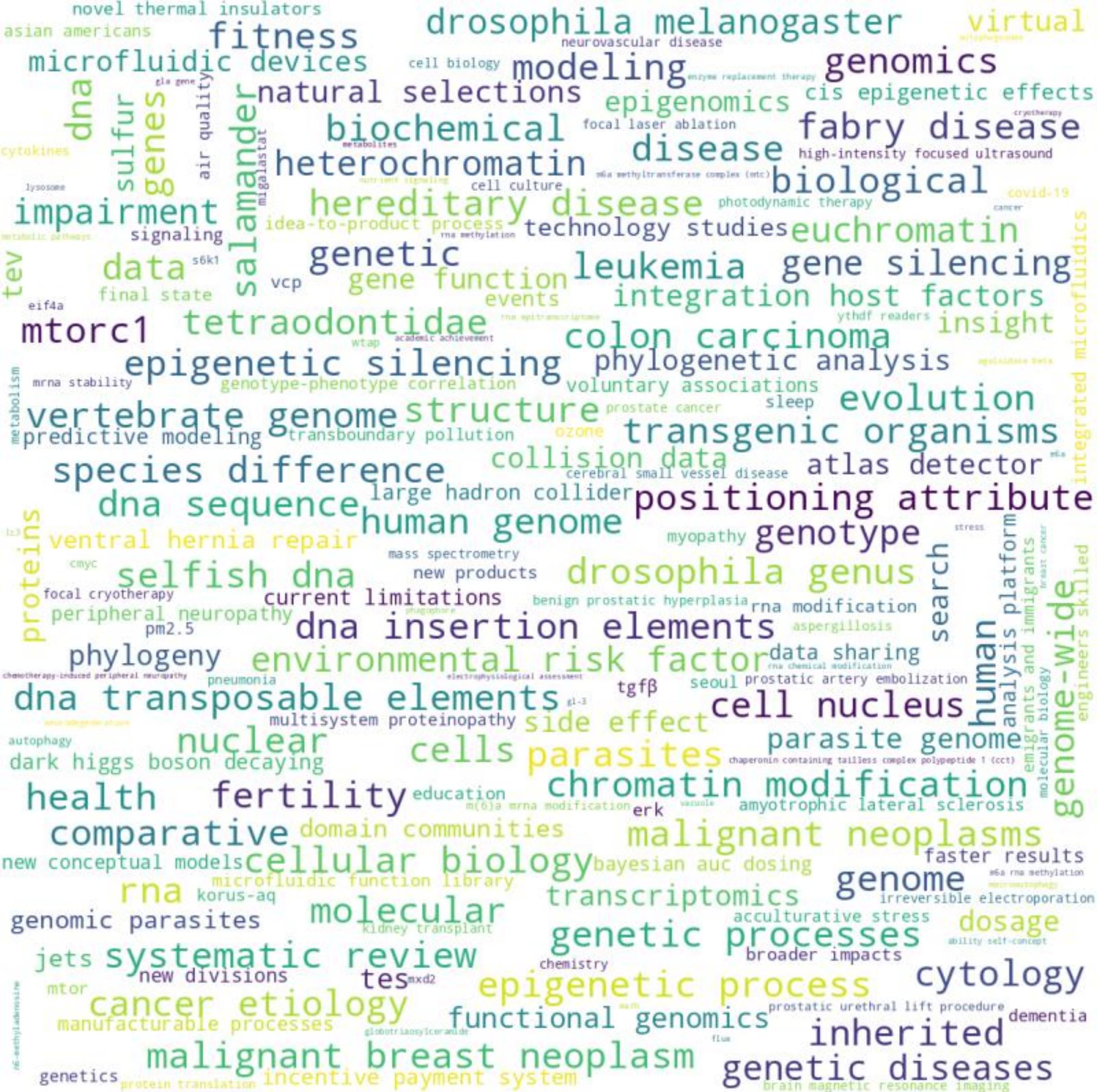
# QING NIE @ UCI



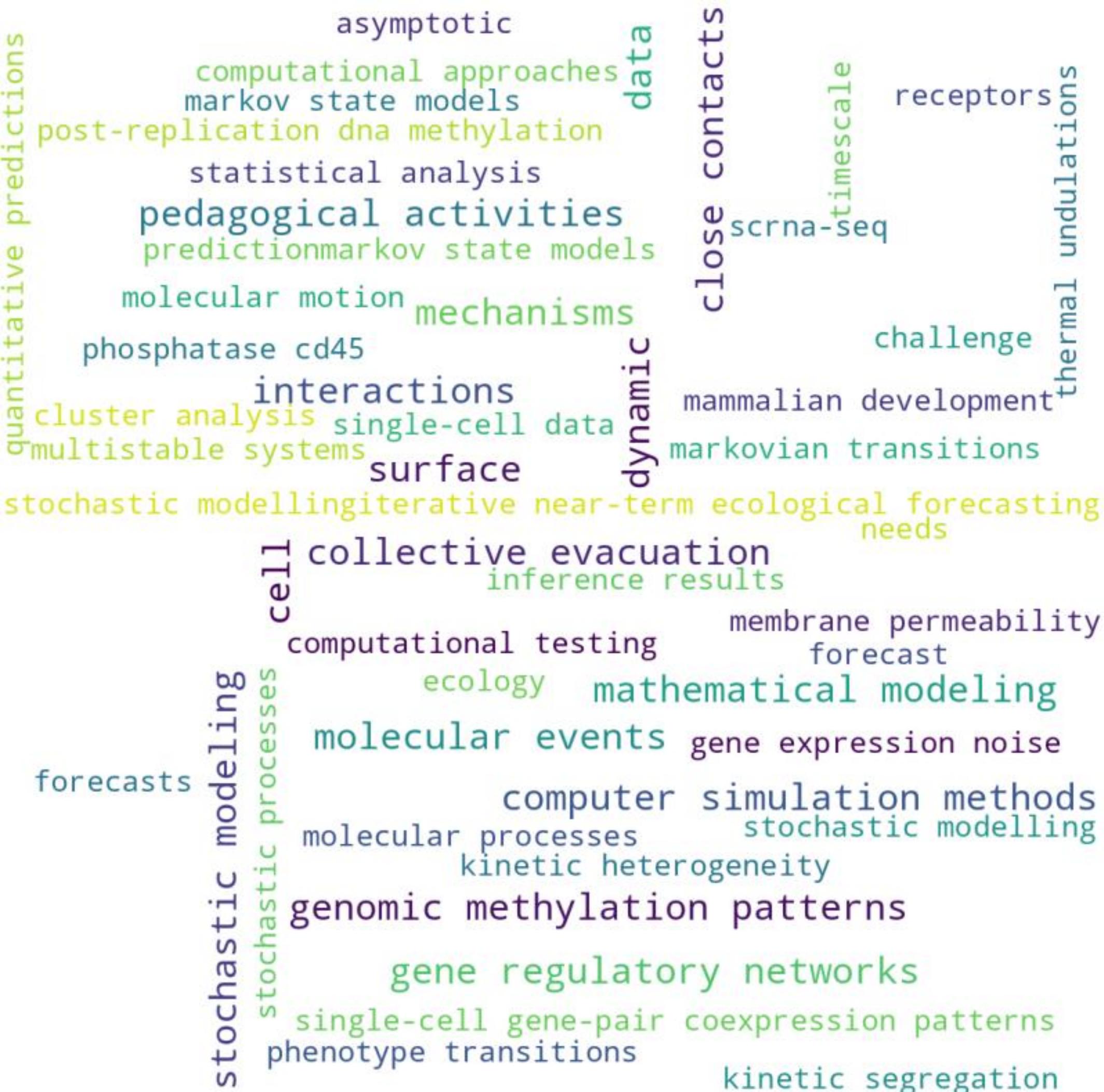
ALI MORTAZAVI@UCI

# KIM GREEN





# GRACE LEE@UCI



ELIZABETH READ@UCI

A dense word cloud centered around the theme of tissue engineering and biomaterials research. The words are color-coded by category:

- Biological:** skin carcinoma, biological, porous implants, mosaicism, melanoma.
- Orthopedics:** longitudinal studies, generations, grant, continuous monitoring, clm, islet transplantation, biomaterials useful, multiphasic modeling, hydrogen sulfide, implant compatibility, in situ, engineering, exercise physiology, self-assembly, fibrin, pericellular stiffness, second harmonic, ecm mechanics, differential effect, heterogeneous, langerhans cell.
- Environment:** instantaneuous changes, arterial fatty streak, fibrin fiber conformation changes, diagnostic device, laser tweezers, environmental health, environmental monitoring, environmental sensors.
- Imaging:** imaging capabilities, imaging challenges, diagnostic device, laser tweezers, environmental health, environmental monitoring, environmental sensors.
- Microscopy:** electron microscopy, fluorescence scanning, two-photon, optical tweezers, mechanical properties, microscopy, molecular properties, cellular morphology.
- Cell Biology:** grant, continuous monitoring, clm, islet transplantation, biomaterials useful, multiphasic modeling, hydrogen sulfide, implant compatibility, in situ, engineering, exercise physiology, self-assembly, fibrin, pericellular stiffness, second harmonic, ecm mechanics, differential effect, heterogeneous, langerhans cell, relevant model cell system, intradermal vaccination, development, endothelial cells, subcutaneous scaffolds, blood ph, blood vessels, oxygen monitoring, cellular remodeling, contractile, immune system, frequent measurements, oxygen monitoring, cellular remodeling, contractile, immune system.
- Structural Biology:** structure, bulk measurements, relevant model cell system, intradermal vaccination, development, endothelial cells, subcutaneous scaffolds, blood ph, blood vessels, oxygen monitoring, cellular remodeling, contractile, immune system.
- Regeneration:** regenerative medicine, stem cells, tissue engineering, extracellular matrix, biocompatible materials, cardiac tissue engineering, high resolution imaging, near-term research goal, continuous, high resolution imaging.
- Therapy:** grant, continuous monitoring, clm, islet transplantation, biomaterials useful, multiphasic modeling, hydrogen sulfide, implant compatibility, in situ, engineering, exercise physiology, self-assembly, fibrin, pericellular stiffness, second harmonic, ecm mechanics, differential effect, heterogeneous, langerhans cell, relevant model cell system, intradermal vaccination, development, endothelial cells, subcutaneous scaffolds, blood ph, blood vessels, oxygen monitoring, cellular remodeling, contractile, immune system, frequent measurements, oxygen monitoring, cellular remodeling, contractile, immune system.
- Device:** micro-stereolithographic three-dimensional printing, lens, molecular biology, minor, agreement, critical care monitoring, microscopy, ecm, dendritic cell, patterned crosslinking, basic science, mechanics, clinical application, device, physiological, fibroblasts, tissue regeneration, contrast imaging, tissue imaging.



**ELLIOT BOTVINICK@UCI**

phylogenetic conservation arrhenius changes  
greenhouse gas extracellular enzymes reciprocal transplant  
microbial decomposition forest trees ecosystem function  
bacterial methanotropy microbial traits  
mediterranean ecosystems  
community organizations climate microorganism  
sophisticated computer model soil warming  
macromolecular rate theory biogeochemical rates  
graduate students  
yaş framework fungi carbon cycling  
soil organic matter individual-based model  
global change temperature sensitivity  
fungal traits soil microbes  
leaf litter decomposition microbial community model  
extracellular enzyme traits transition state theory  
loma ridge global change experiment  
activation energy litter decomposition  
chemical processes  
drought global carbon cycle invertebrates  
trait tradeoff  
microbial diversity leaf litter  
microbial biomass turnover (rb)  
enzymes southern california termites  
soil heterogeneity soil extracellular enzyme soil bacteria  
soil bacteria plant litter thermal adaptation  
fungal decomposers warming harvard forest  
climate gradient litter  
climate change  
carbon modelling warming temperatures  
wood carbon use efficiency (cue)  
data-model integration microbes  
drought-net sites aggregate reactor  
dead plant matter  
aggregate-based model decay  
extracellular enzyme life history  
elevation gradient tree mortality  
ecosystem process  
q10  
tree mortality history strategy  
life history  
decay  
enzyme  
aggregate  
reactor  
dead plant matter  
aggregate-based model decay  
extracellular enzyme life history  
elevation gradient tree mortality  
ecosystem process  
q10  
tree mortality history strategy  
life history  
decay  
enzyme  
aggregate  
reactor



STEVE ALLISON@UCI

# CHANG UNIV



reperfusion-induced neuronal injury  
label-free single-cell movie tracking  
potential therapeutic targets  
cell apoptosis  
chinese women  
tlr4 transcription  
cp: molecular biology  
htn  
alternative splicing  
variation  
schisantherin  
negative autoregulatory splicing  
**negative autoregulatory splicing dynamics**  
cardiometabolic risk components  
rats  
regulators  
biological noise  
**single-cell level**  
**effective biochemical parameters**  
cardiometabolic health  
frequent  
spliceosome components  
mets pathways recovery  
htg  
midlife women transition  
high fasting triglyceride  
inflammation  
reperfusion menopause  
prospective multiethnic study c5ar1  
functional roles  
ethnic women  
low high-density lipoprotein cholesterol  
apoptosis  
mathematical model  
attenuates ischemia  
feedback adaptation  
molecular biology  
treatment  
1hdl-c  
abdominal obesity dynamics  
constellations  
feedback dynamics  
neuroprotection  
secondary damage  
hgluc  
**negative autoregulation**  
schisantherin a



FANGYUAN DING@UCI

# PERSONAL GENOMICS

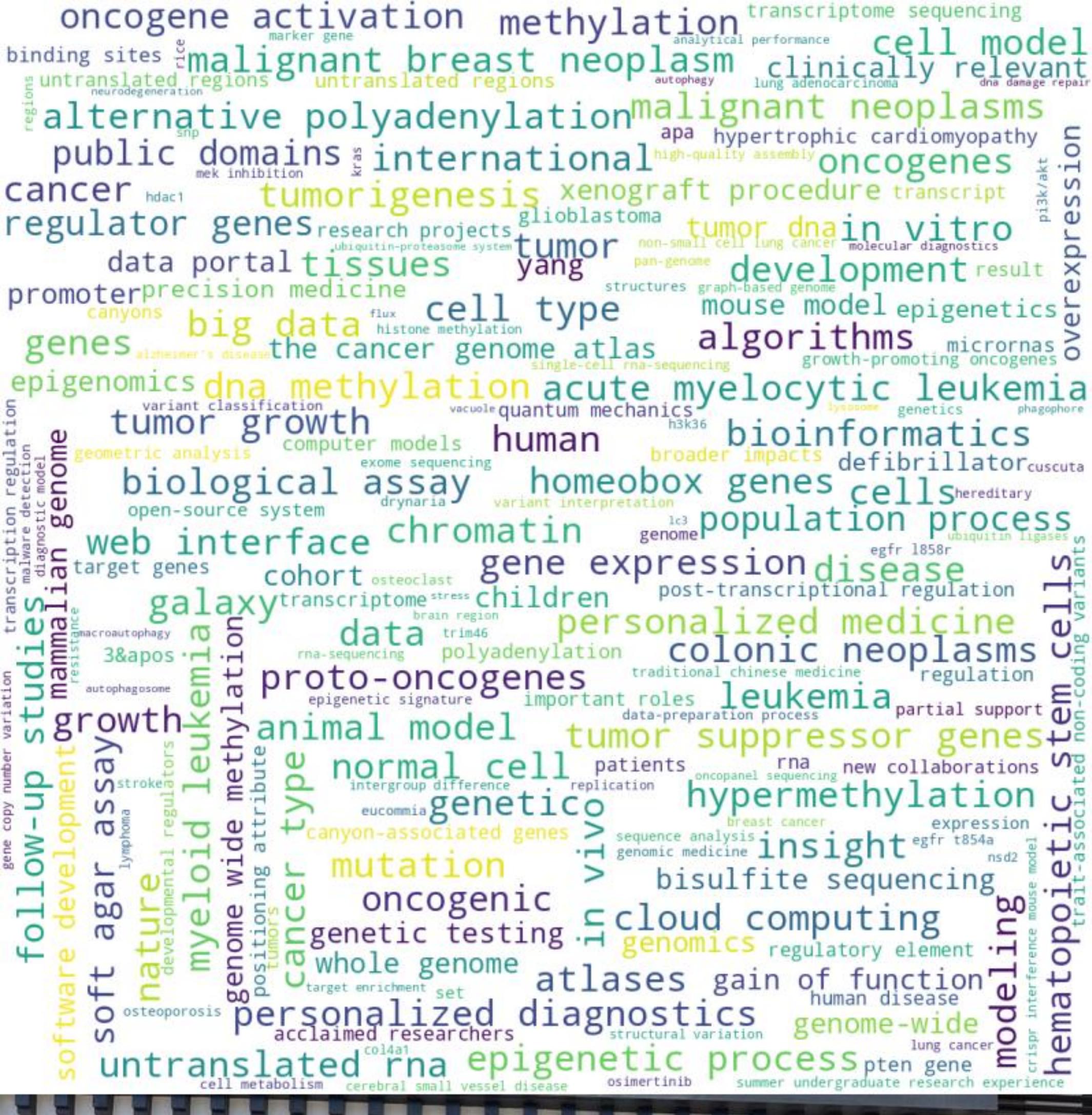
population sizes mutant structural variants  
asian rice malaria control rice human  
sensory adaptation natural selections evolutionary forces genetic  
smaller gene frequency genome-wide larger  
weaker animals innovation new standard pathogen  
assembly eukaryotic genomes insecticide resistance genes  
important role structure functional constraints chromosome  
genomic variation genome health resolution  
resistance genetic diseases biological preservation genes gene structure  
ultrasound cancer etiology domestication driving force  
urban malaria ripe fruit oviposition preference  
egg-laying phenotype pesticide resistance  
transposable elements  
drosophila genetic transcription environment  
gene gain and loss approach amylase invasive malaria vector  
human genetics structural genes major phases  
structural variation collection digestive physiology  
population genetics genome assembly gene annotations  
animal crop pests invasion biology neighborhoods  
hybrid imaging dna nucleic acid regulatory sequences general understanding  
sequence gaps data blood feeding genotype novel phenotypes  
automobile driving plants conductivity-weighted ultrasound  
drosophila species radio-frequency imaging microbiome engineering genetic drift  
genomics genetic polymorphism differential gene expression mutation novel behavior  
hereditary disease influence pattern drosophila genus origin  
deletions nanopore sequencing platinum disease comparative genomics human health  
complex important source pathogen resistance reference-quality assembly reference genome data  
gene expression acoustic imaging genetic variation novel species-specific transposable element population genomics  
fitness chromosomes natural selection recording of previous events sample fixation  
reference genome malignant neoplasms genome structure carboxyl ester lipase



MARIAN WATERMAN@UCI

# GENE KNOWLEDGE

main areas model system secure genome cas9 technology human deletion protein mammalian genome independent phase mutation insight cell mechanisms project summary transcriptional enhancers cohort promoter embryo tissue pattern cas9 genome editing functional elements genes crispr/cas technology dna in vivo malignant neoplasms maps detailed understanding enhancer-promoter interactions transgenesis disease environment gene expression genome analysis genetic transcription limb structure vivo mouse studies endogenous genomic location development concerted activity biological models mentored phase limb development cis-regulatory elements courses genome editing gene expression regulation categories human genome project knock-in genome-wide analysis perfect sequence conservation evolution pronuclear injection knock-out positioning attribute human genome project knock-in human disease mice genomics transcriptome sequencing embryo lacz reporter tissues h11 safe-harbor locus biology mus research training different classes rodent gene interaction mouse transgenesis heart diseases transgenic mice mentorship regulation gene targeting novel method capture-c technology untranslated rna code chromatin structure resolution workshops crispr educational workshop cells shh gene deletions mouse tissues enhancers vivo target genes enhancer-promoter specificity



LITTLE SISTER



# WEI LI @ UCI

basic immunology pathology primap mice  
contraction local proliferation image diabetic ulcer  
new vectors immune migratory changes wiskott-aldrich syndrome  
cell motility cd28 chronic wound  
driving force chronic healthy skin cancer mechanism regulatory cell ulcer  
disease modeling macrophages support skin wound healing  
health tissue macrophages wound skin ulcer migration maps  
tissue macrophages diabetic mouse multiphoton intravital microscopy  
cd4 positive t lymphocytes macrophage hematopoietic stem/progenitor cell  
vivo tumor tolerance intravital microscopy skin wound skin  
signal pathway in vivo aims restorative development impairment  
ctla-4 pathogenesis insight red fluorescent protein therapies  
tumor skin repair nomenclature therapeutic  
piezo1 cell behavior physiologic generations skin wound healing  
malignant neoplasms cells immunology  
therapy development molecular targeted treatment  
pathologic pathological states histological analysis  
tomatoes data animal model chronic ulcers  
central role engineering pro-inflammatory macrophages medical  
suitable animal models gene therapy  
pattern cytotoxic t lymphocyte-associated protein 4 in situ diabetic  
monocyte histologic mus inflammatory  
mp-ivm tumor-associated treg cells treg cell reduced-intensity conditioning  
stimulus fas anti-inflammatory nfat tissues  
functional disorder melanoma nuclear factor of activated t cells pathophysiology  
wound healing

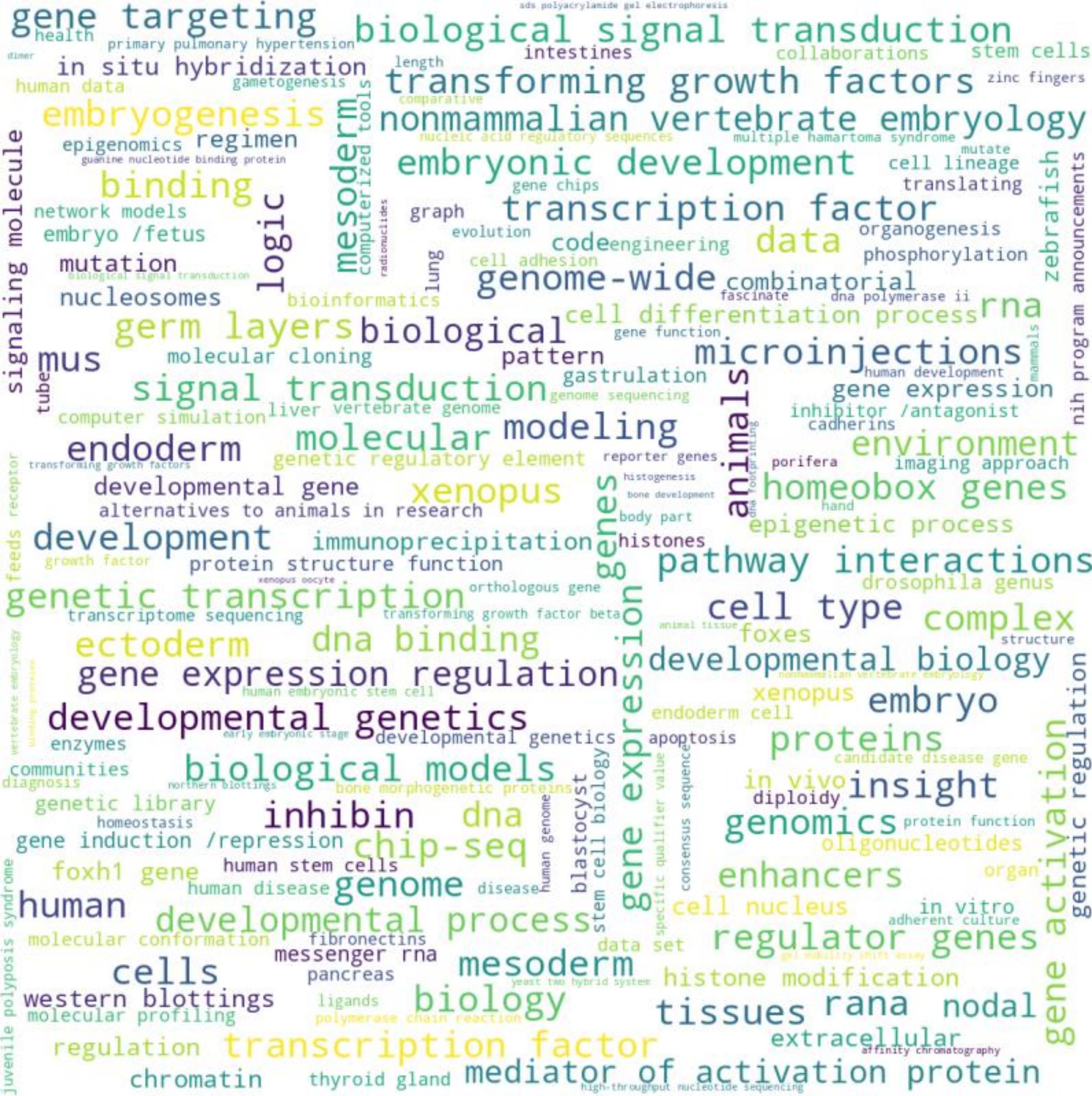
FRANCESCO MARANGONI@UCI

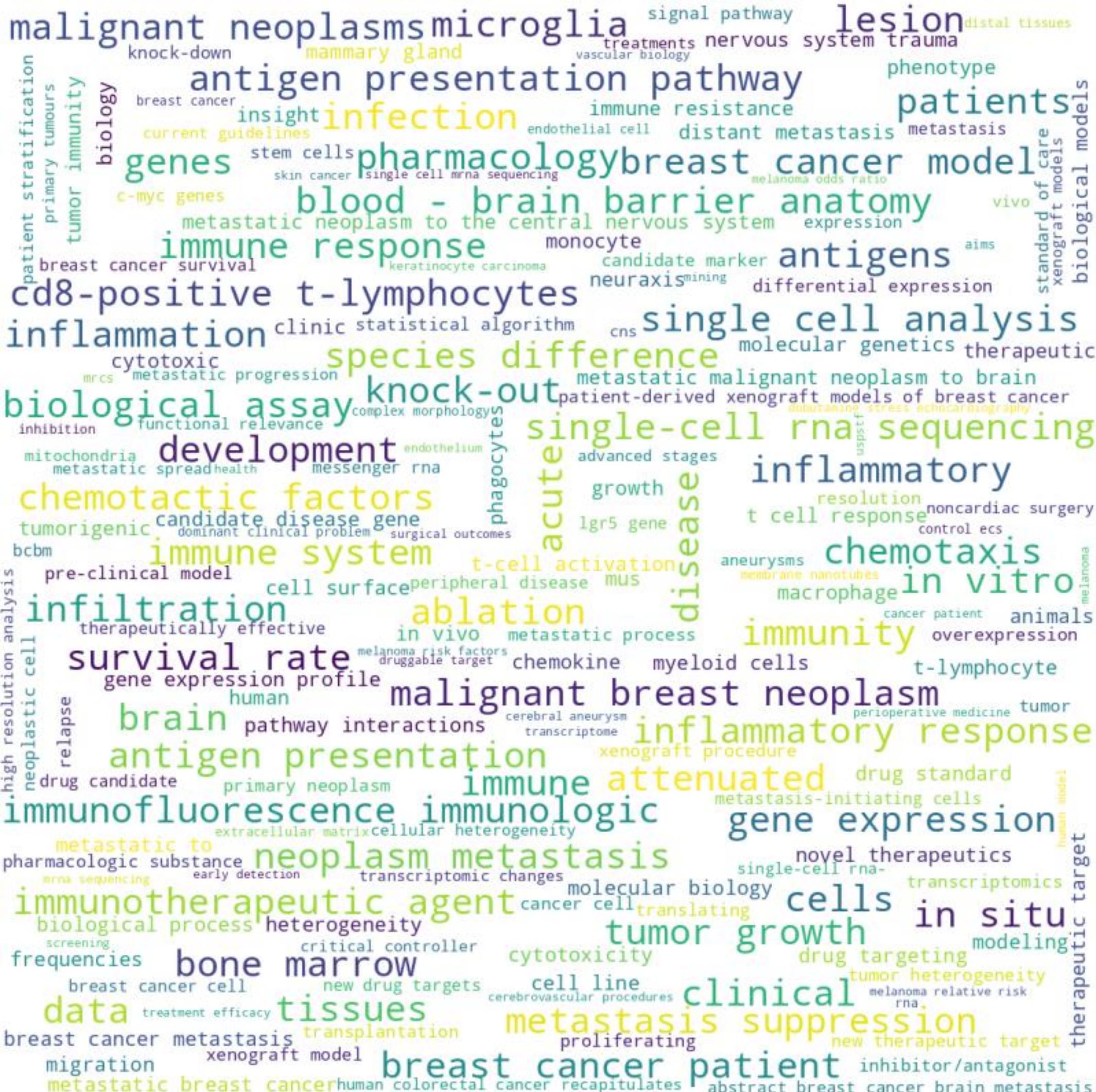
modeling  
navigational knowledge  
comparative network models  
knowledge graph neuroscience  
cross-disciplinary aims advantages  
communication functional magnetic resonance imaging  
complex cognitive mechanisms graph  
disease parkinson disease decision making  
episodic memory computational basis human navigation  
science network different strategies  
attention deficit hyperactivity disorder  
pathway interactions animal model  
robotics human existence  
brain home drug addiction psychological reinforcement  
cohesion neural learning spatial memory  
pattern brain imaging locations way finding  
corpus striatum structure human autonomous systems  
mental depression phs circuit  
nsf communities memory functional disorder  
obsessive-compulsive disorder temporal lobe  
self-driving vehicles gps systems major depressive disorder  
nature insight virtual reality  
dangerousness structure stem fields  
geometric structure relating to nervous system  
environment initial test clinical  
graph learning spatial orientation hippocampus (brain)  
particular broader impacts review criteria  
mental disorders



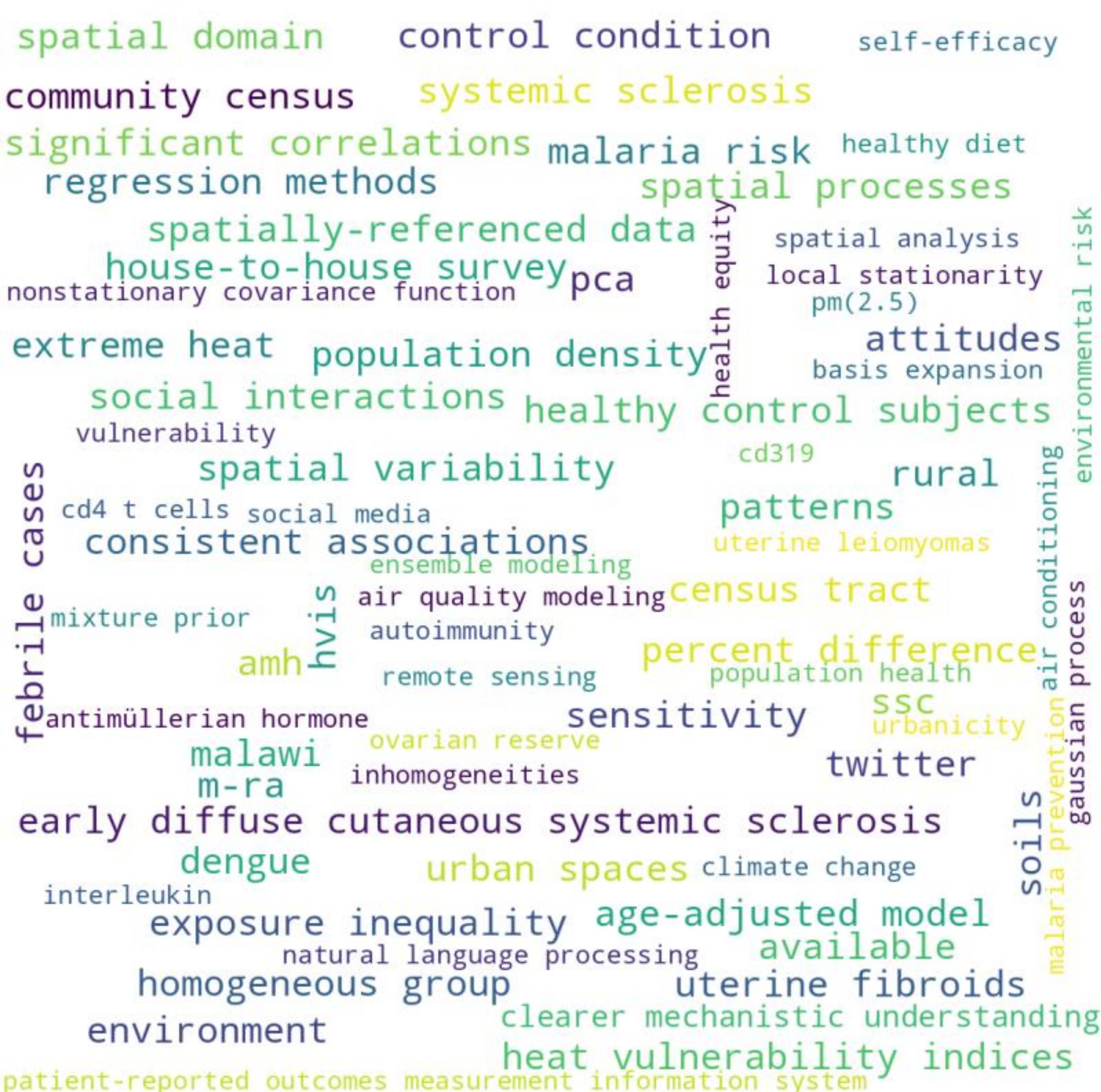
LIZ CHRASTIL@UCI

NIH OncoGene

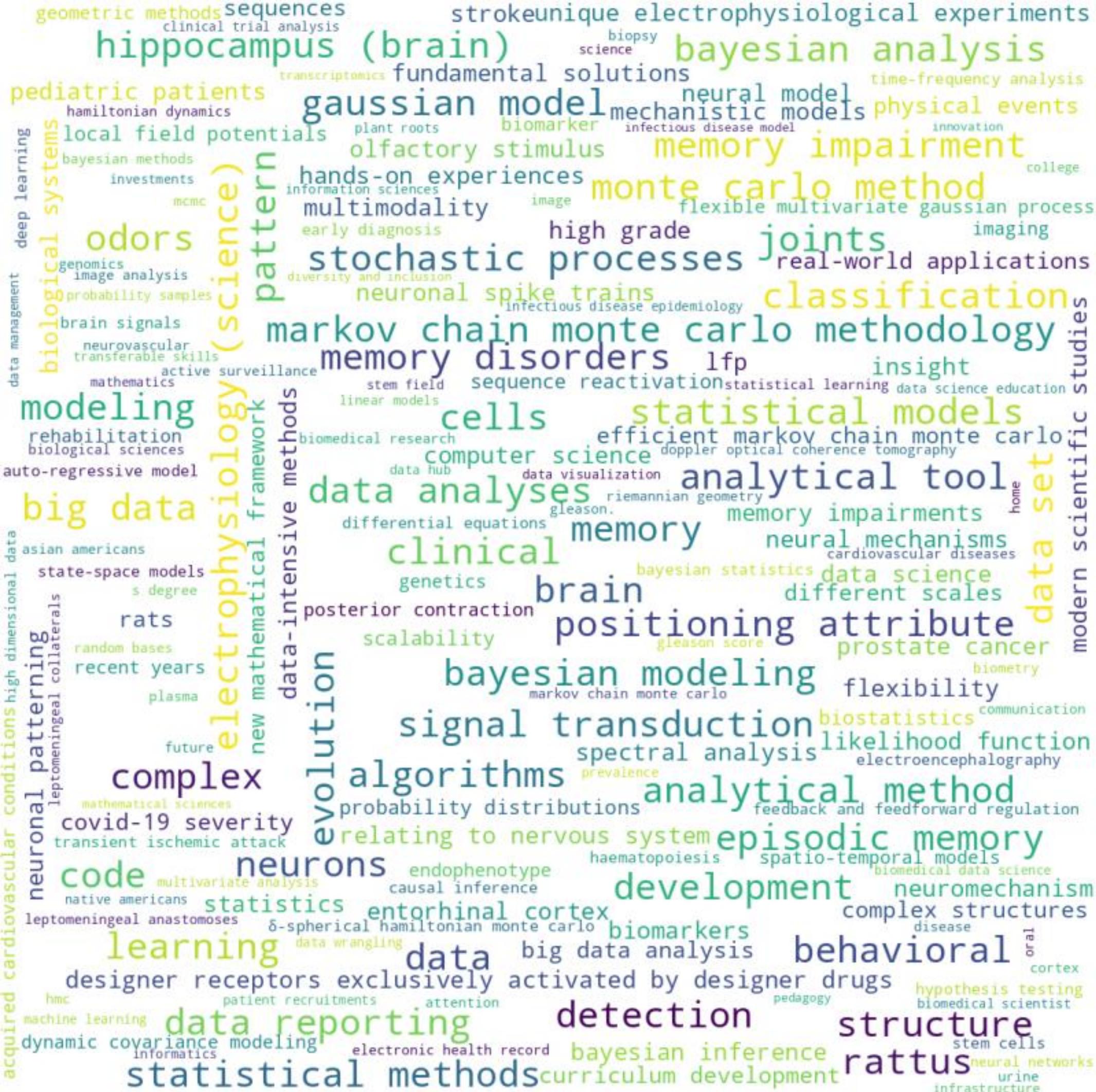




# DEVON LAWSON@UCI

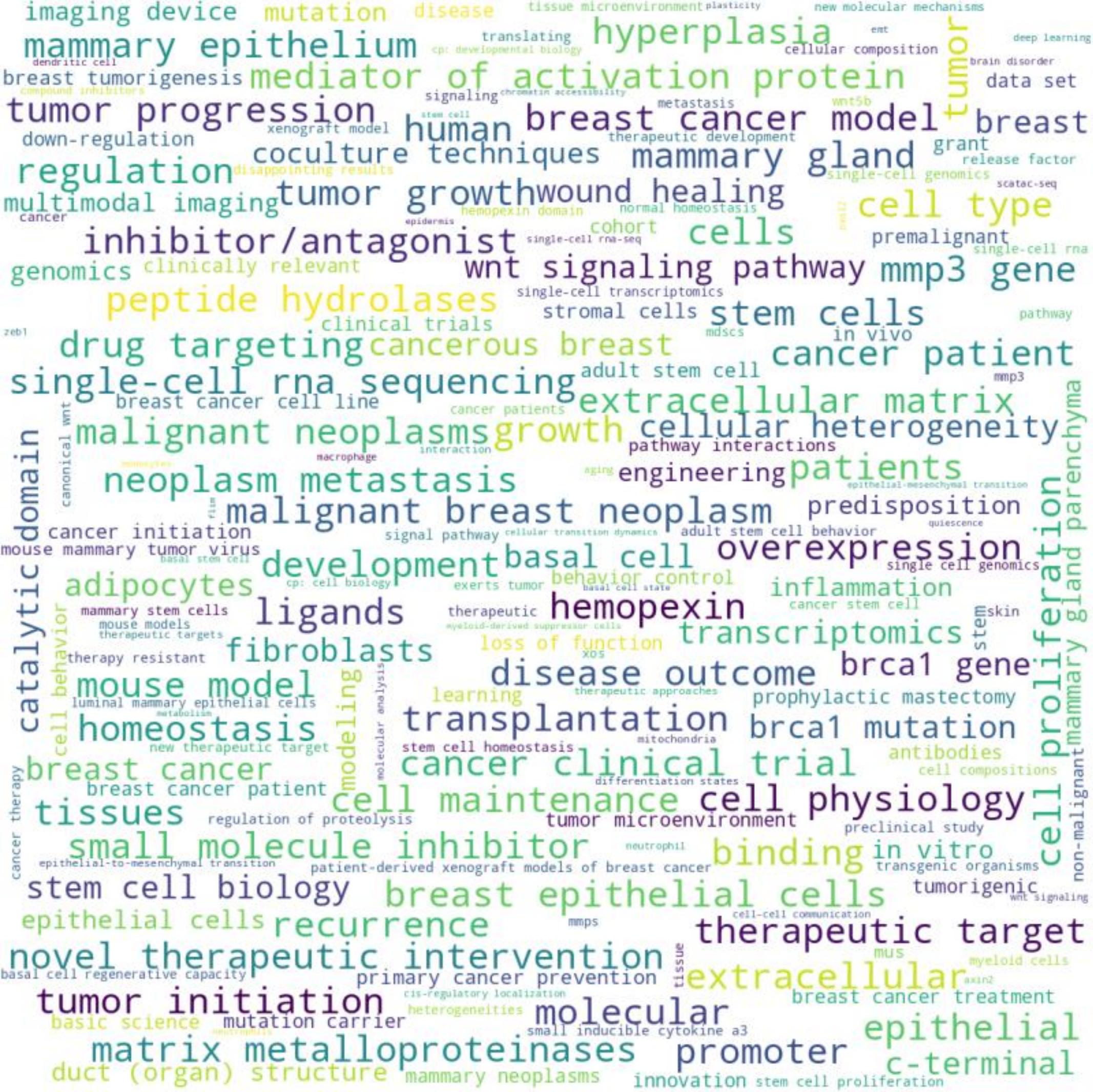


VERONICA BERROCAL@UCI



BABAK SHAHBABA@UCI

# KAIKESEN BROCKMÜLLER



drug abuse prevention behavioral extinction adeno-associated viruses molecular substrate  
mouse intervention aversion slice combination drug therapy  
psychostimulant cocaine use auditory long term memory inputs and outputs  
site-specific recombinase synaptic plasticity nucleus accumbens  
future extended amygdala conditional knockout rodent detailed input-output map  
spatiotemporal monosynaptic synaptic changes pathway interactions  
gamma-aminobutyric acid synaptic changes retrograde (backward) motion  
nicotine therapeutic neuronal circuitry cocaine fear memory  
reduce symptoms glutamate receptor neurons calcium imaging  
acute pseudorabies optogenetics laterodorsal tegmentum s disease model  
rabies modeling pathogenesis cell types mice  
virus genetics amygdala rodent ad models optogenetics deterioration  
behavior therapy behavior therapy anterograde granule cells  
genetic techniques conditioned fear viral tracing data critical rhabdovirus  
trans-synaptic substance abuse problem connected neurons zip preliminary data  
electrophysiology (science) mosaic recombination synapses additive behaviors  
anxiety inputs midbrain structure peptides memory impairment  
input mapping dose molecular genetics plasticity modulation conditional reporter innovation  
cell type caregivers self administration genetic approach  
molecular addiction impairment amiloride  
caregivers mus learning drug relapse cerebellum  
prosencephalon brodmann area 10 drug addiction injections  
spatial patterning withdrawal functional disorder ppg  
signal transduction lateral shell nodose ganglion  
globus pallidus structure da circuits birth timing  
single administration dopamine plasticity  
transsynaptic inhibition memories  
extinction (psychology) multiple subtypes stress biological assay  
habenula mouse model lateral shell  
withdrawal symptom brain relapse novel therapeutics  
distinct functions immune response germline recombination glial cells amygdaloid structure  
drug screening aversive experiences reward functional connectivity  
aversive experiences behavioral effects pharmaceutical preparations rabies virus  
drug abuse behavioral effects genetic technology cre driver lines cocaine withdrawal  
behavioral effects GIP<sup>1</sup> functional connectivity deep brain stimulation  
aversive experiences in vivo tractography  
aversive experiences cre driver lines in vivo  
aversive experiences genetic technology herpes

KEVIN BEIER@UCI



# RAY LUO@UCI

# BERNARD CHOCUCCI

laser speckle contrast imaging  
morphology low-level laser therapy  
childhood hemodynamics device or instrument development  
vascular permeabilities cerebrovascular excision in vivo model  
psychologic communities cerebral blood flow chemicals  
polyethylene glycols tissue oxygenation skin cutaneous therapeutic  
bevacizumab necrosis physics predictive value diagnostic  
perfusion suicide psychosocial regimen port-wine stain  
in vitro speckle contrast glycols thick  
obesity biological rodent lesion optical imaging ambulatory care facilities  
treatment protocols modeling photoplethysmography clinic  
oral health blood flow polypropylenes pre-clinical  
spatial frequency domain imaging optics imaging technology  
toothache image spreading cortical depression physiologic pulse tooth structure  
dental pulp biochemical animal model diffuse translational research  
infection novel therapeutics diffuse translational research  
national center for research resources  
dorsal borderline personality disorder  
tooth loss vascular endothelial growth factors  
environment oral cavity  
diagnosis maps oxygen  
translations pain patients clinical management child  
blood circulation cancer therapy wound healing  
operative surgical procedures angiogenesis  
dentists innovation disease  
dose grant brain imaging  
computer retrieval of information on scientific projects database  
penetration light propagation in tissues  
clinical laser surgery interdisciplinary study  
mus health status adolescent gene expression basic science  
data dermal computer simulation color light  
clinical application computer simulation signal transduction bulla  
burns reducing agents  
in vitro testing  
hamsters topical application  
biotechnology  
endodontics  
rattus  
dyes  
phototherapy planning  
treatment planning  
inflammation  
cicatrix  
abscess digital photography  
pharmaceutical preparations treatment planning  
generations optical coherence tomography  
natural regeneration

# ANNA GROSBERG@UCI





# MICHELE GUINDANI@UCI

# MARIA REBOLLEDA-GOMEZ@UCI

origin  
knowledge innovation  
non-commutative epistasis  
stunning metabolic diversity  
microbial consortia  
reproduction bacteria microbiome direction ethnicity  
ecological relations  
complex communities fungi g-p  
organismal level  
artificial ecosystem selection  
life history flowering  
macroevolution evolution timing  
developmental events plant-microbe interactions  
microbiota host survival  
metabolism phenology  
microbial world external factors fitness  
plant development microbes interaction  
niche construction future  
nutrient acquisition race  
plant phenology genotype-phenotype (g-p) map racism  
large assemblages  
necessary stressful conditions  
current mechanistic rhizosphere  
microbe-driven changes  
microbial metabolism phyllosphere  
alternative actionable ways  
plant growth promoting bacteria

genotype-by-environment ( $g \times e$ ) interaction

NEUROSCIENCE  
@DUC

