SUPPLEMENTARY MATERIAL

Table S1. MEDLINE search terms.

All Ovid MEDLINE <January 1, 1995 - July 5, 2022>	
Search Item	**Search Keywords**
1	(neuro-oncolog* or neurooncolog* or brain oncolog* or brain neoplasm* or brain tumour or brain cancer or neurological cancer or neurological tumour or neurological tumor or brain tumor or glioblastoma or astrocytoma or malign* tumor or glioma* or brain meta*).ti. or exp brain neoplasms/ or exp meningeal neoplasms/ or exp neuroectodermal tumors/ or exp neoplasms, nerve tissue/
2	(MNI* or Montreal Neurological Institute or mapp* or frequency map* or heatmap* or heat map* or angle map* or standard space or common space).mp. or (connectom* or atlas or connectivity or probabilistic or spatial distribution or map*).ti,kw.
3	exp chordata, nonvertebrate/ or exp amphibians/ or exp birds/ or exp fishes/ or exp afrotheria/ or exp artiodactyla/ or exp carnivora/ or exp cetacea/ or exp chiroptera/ or exp eulipotyphla/ or exp lagomorpha/ or exp pangolins/ or exp perissodactyla/ or exp cercopithecidae/ or exp gorilla gorilla/ or exp neanderthals/ or exp pan paniscus/ or exp pan troglodytes/ or exp pongo/ or exp hylobatidae/ or exp platyrrhini/ or exp tarsii/ or exp strepsirhini/ or exp rodentia/ or exp scandentia/ or exp xenarthra/ or exp marsupialia/ or exp monotremata/ or exp reptiles/ or exp invertebrates/ or (canine or macaque or rodent or rat or mouse or mice or swine*).mp. or exp Pediatrics/ or (pediatric or child*).mp.
4	1 and 2
5	4 not 3
6	limit 5 to (english language and yr="1995 -Current")

* synonyms.

Table S2. Articles that utilize MNI in neuro-oncology research.

Published Year	**Title**	**Author**	**Input**	**Output**	**Patients**
2022	A novel MRI-based quantitative water content atlas of the human brain.	Shah et al.[1]	tumor (glioma)	water atlas	20
2022	Are there predilection sites for intracranial meningioma? A population-based atlas.	Hosainey et al.[2]	tumor (meningioma)	spatial distribution; demographics	602
2022	Connectivity-based parcellation of normal and anatomically distorted human cerebral cortex.	Doyen et al.[3]	tumor (glioma)	method: parcellation	218
2022	Anatomical phenotyping and staging of brain tumours.	Akeret et al.[4]	tumor (general)	spatial distribution; genetic subtype; prognosis	1000
2021	Improving Localization of Brain Tumors through 3D GAN Inpainting.	Weninger et al.[5]	tumor (general)	method: normalization	N/A
2021	Support vector machine based aphasia classification of transcranial magnetic stimulation language mapping in brain tumor patients.	Wang et al.[6]	miscellaneous: rTMS	function map: language	90
2021	Exploration of spatial distribution of brain metastasis from small cell lung cancer and identification of metastatic risk level of brain regions: a multicenter, retrospective study.	Wang et al.[7]	tumor (brain metastases)	spatial distribution; primary tumor subtype	215

2021	Planning Brain Tumor Resection Using a Probabilistic Atlas of Cortical and Subcortical Structures Critical for Functional Processing: A Proof of Concept.	Sarubbo et al.[8]	DES	method: constructing function map	10
2021	Virtual brain grafting: Enabling whole brain parcellation in the presence of large lesions.	Radwan et al.[9]	tumor (glioma)	method: normalization	110
2021	A Voxel-Based Radiographic Analysis Reveals the Biological Character of Proneural-Mesenchymal Transition in Glioblastoma.	Qi et al.[10]	tumor (glioma)	spatial distribution; prognosis; genetic subtype	223
2021	Surgery of Insular Diffuse Gliomas-Part 2: Probabilistic Cortico-Subcortical Atlas of Critical Eloquent Brain Structures and Probabilistic Resection Map During Transcortical Awake Resection.	Pallud et al.[11]	DES	function map: language	61
2021	Lesion covariance networks reveal proposed origins and pathways of diffuse gliomas.	Mandal et al.[12]	tumor (glioma)	spatial distribution; miscellaneous: transcriptomics	410
2021	The link between gliomas infiltration and white matter architecture investigated with electron microscopy and diffusion tensor imaging.	Latini et al.[13]	tumor (glioma)	genetic subtype; spatial distribution	67
2021	Survival of glioblastoma in relation to tumor location: a statistical tumor atlas of a population-based cohort.	Fyllingen et al.[14]	tumor (glioma)	spatial distribution; prognosis	215
2021	High-Grade Gliomas Located in the Right Hemisphere Are Associated With Worse Quality of Life.	Fortin et al.[15]	tumor (glioma)	spatial distribution; prognosis	53
2021	Lesion-symptom mapping of language impairments in patients suffering from left perisylvian gliomas.	Fekonja et al.[16]	tumor (glioma)	spatial distribution; function map: language	60
2021	The Infratentorial Localization of Brain Metastases May Correlate with Specific Clinical Characteristics and Portend Worse Outcomes Based on Voxel-Wise Mapping.	Dou et al.[17]	tumor (brain metasis)	spatial distribution; demographics; genetic subtype; prognosis	1102
2021	Effect of brain normalization methods on the construction of functional connectomes from resting-state functional MRI in patients with gliomas.	Chen et al.[18]	tumor (glioma)	method: normalization	50

2021	Time-to-contact perception in the brain.	Baures et al.[19]	DES	spatial distribution: function map: cognition	40
2020	Mapping seizure foci and tumor genetic factors in glioma associated seizure patients.	Yunhe et al.[20]	tumor (glioma)	spatial distribution; symptom map: seizure; genetic subtype	119
2020	Accurate MR Image Registration to Anatomical Reference Space for Diffuse Glioma.	Visser et al.[21]	tumor (glioma)	method: normalization	40
2020	Mapping distribution of brain metastases: does the primary tumor matter?.	Schroeder et al.[22]	tumor (brain metastasis)	spatial distribution; primary tumor subtype	369
2020	New insights into the neural foundations mediating movement/language interactions gained from intrasurgical direct electrostimulations.	Rech et al.[23]	DES	function map: motor	100
2020	Lateral or Medial Surgical Approaches for Thalamic Gliomas Resection?.	Qinglong et al.[24]	tumor (glioma)	spatial distribution; prognosis	53
2020	Lesion Network Mapping Analysis Identifies Potential Cause of Postoperative Depression in a Case of Cingulate Low-Grade Glioma.	Mansouri et al.[25]	resection	symptom map: cognitive dysfunction; spatial distribution	1
2020	Genetic, cellular, and connectomic characterization of the brain regions commonly plagued by glioma.	Mandal et al.[26]	tumor (glioma)	miscellaneous: transcriptomics; spatial distribution	335
2020	Alterations of white matter integrity associated with cognitive deficits in patients with glioma.	Liu et al.[27]	tumor (glioma)	symptom map: cognitive dysfunction	49
2020	Differences in the preferential location and invasiveness of diffuse low-grade gliomas and their impact on outcome.	Latini et al.[28]	tumor (glioma)	spatial distribution; genetic subtype; growth pattern	102
2019	Combining resting state functional MRI with intraoperative cortical stimulation to map the mentalizing network.	Yordanova et al.[29]	DES	function map: cognition	23
2019	A low percentage of metastases in deep brain and temporal lobe structures.	Yanagihara et al.[30]	tumor (brain metastasis)	spatial distribution	277
2019	Differences between primary central nervous system lymphoma and glioblastoma: topographic analysis using voxel-based morphometry.	Yamashita et al.[31]	tumor (glioma and lymphoma)	spatial distribution	170
2019	Arterial Spin Labeling for Glioma Grade Discrimination: Correlations with IDH1	Wang et al.[32]	tumor (glioma)	perfusion map	52

	Genotype and 1p/19q Status.				
2019	Integrated datasets of normalized brain with functional localization using intra-operative electrical stimulation.	Tamura et al.[33]	DES	function map: language; motor; sensation	13
2019	Brain atlas for assessing the impact of tumor location on perioperative quality of life in patients with high-grade glioma: A prospective population-based cohort study.	Sagberg et al.[34]	tumor (glioma)	spatial distribution; prognosis	170
2019	MRI Atlas of IDH Wild-Type Supratentorial Glioblastoma: Probabilistic Maps of Phenotype, Management, and Outcomes.	Roux et al.[35]	tumor (glioma)	spatial distribution; genetic subtype; prognosis	392
2019	A probabilistic map of negative motor areas of the upper limb and face: a brain stimulation study.	Rech et al.[36]	DES	function map: motor	117
2019	Precuneus and psychiatric manifestations: Novel neurobiological formulations through lesion based connectivity mapping of psychopathology.	Narasimha et al.[37]	tumor (granulomatous lesion)	function map: cognition	1
2019	Comparing Glioblastoma Surgery Decisions Between Teams Using Brain Maps of Tumor Locations, Biopsies, and Resections.	Muller et al.[38]	tumor (glioma)	spatial distribution; prognosis	275
2019	Anterior insular cortex stimulation and its effects on emotion recognition.	Motomura et al.[39]	DES	function map: cognition	18
2019	Seed-Based Connectivity Analysis of Resting-State fMRI in Patients with Brain Tumors: A Feasibility Study.	Metwali et al.[40]	tumor (glioma)	method: constructing connectome	30
2019	Electrically induced verbal perseveration: A striatal deafferentation model.	Mandonnet et al.[41]	DES	function map: language	21
2019	Hotspots of small strokes in glioma surgery: an overlooked risk?.	Loit et al.[42]	tumor infarcts	spatial distribution; infarct map; prognosis	150
2019	A novel radiological classification system for cerebral gliomas: The Brain-Grid.	Latini et al.[43]	tumor (glioma)	miscellaneous: classification system	39
2019	Association between tumor location and neurocognitive functioning using tumor localization maps.	Habets et al.[44]	tumor (glioma)	spatial distribution; symptom map: cognitive dysfunction	72
2019	Lesion symptom mapping at the regional level in patients with a meningioma.	De et al.[45]	tumor (meningioma)	function map: cognition	224

2019	Dissociating motor-speech from lexico-semantic systems in the left frontal lobe: insight from a series of 17 awake intraoperative mappings in glioma patients.	Corrivetti et al.[46]	DES	function map: language	17
2018	Regional specificity of 1p/19q co-deletion combined with radiological features for predicting the survival outcomes of anaplastic oligodendroglial tumor patients.	Wang et al.[47]	tumor (glioma)	spatial distribution; genetic subtype; prognosis	206
2018	Voxel-wise radiogenomic mapping of tumor location with key molecular alterations in patients with glioma.	Tejada et al.[48]	tumor (glioma)	spatial distribution; genetic subtype	368
2018	Multi-Atlas Segmentation of MR Tumor Brain Images Using Low-Rank Based Image Recovery.	Tang et al.[49]	tumor (general)	method: segmentation	N/A
2018	Object-action dissociation: A voxel-based lesion-symptom mapping study on 102 patients after glioma removal.	Pisoni et al.[50]	tumor (general)	spatial distribution; symptom map: language dysfunction	102
2018	Voxel-based lesion mapping of meningioma: a comprehensive lesion location mapping of 260 lesions.	Hirayama et al.[51]	tumor (meningioma)	spatial distribution	260
2018	Regional specificity of matrix metalloproteinase-9 expression in the brain: voxel-level mapping in primary glioblastomas.	Fan et al.[52]	tumor (glioma)	spatial distribution; genetic subtype	133
2018	The Direction of Tumour Growth in Glioblastoma Patients.	Esmaeili et al.[53]	tumor (glioma)	spatial distribution; growth pattern	56
2018	Seizure-susceptible brain regions in glioblastoma: identification of patients at risk.	Cayuela et al.[54]	tumor (glioma)	spatial distribution; symptom map: seizure	391
2017	Anatomical location differences between mutated and wild-type isocitrate dehydrogenase 1 in low-grade gliomas.	Yu et al.[55]	tumor (glioma)	spatial distribution; genetic subtype	92
2017	Neural pathways subserving face-based mentalizing.	Yordanova et al.[56]	DES	function map: cognition; spatial distribution	27
2017	Groupwise registration of MR brain images with tumors.	Tang et al.[57]	tumor (general)	method: normalization	N/A
2017	Automated white matter fiber tract identification in patients with brain tumors.	O'Donnell et al.[58]	tumor (general)	method: constructing connectome	18
2017	Subtypes of breast cancer show different spatial distributions of brain metastases.	Kyeong et al.[59]	tumor (brain metastasis)	spatial distribution; primary tumor subtype	100

2017	Connectomic profile and clinical phenotype in newly diagnosed glioma patients.	Derks et al.[60]	tumor (glioma)	prognosis; spaital distribution	90
2017	IDH mutation and 1p19q codeletion distinguish two radiological patterns of diffuse low-grade gliomas.	Darlix et al.[61]	tumor (glioma)	spatial distribution; genetic subtype	198
2017	Stereotactic probability and variability of speech arrest and anomia sites during stimulation mapping of the language dominant hemisphere.	Chang et al.[62]	DES	spatial distribution; function map: language	102
2017	Addressing the selective role of distinct prefrontal areas in response suppression: A study with brain tumor patients.	Arbula et al.[63]	tumor (general)	spatial distribution; cognition	37
2016	Mapping genetic factors in high-grade glioma patients.	Yuan et al.[64]	tumor (glioma)	spatial distribution; genetic subtype; prognosis	65
2016	Computational Identification of Tumor Anatomic Location Associated with Survival in 2 Large Cohorts of Human Primary Glioblastomas.	Liu et al.[65]	tumor (glioma)	spatial distribution; prognosis	384
2016	Chronic spatial working memory deficit associated with the superior longitudinal fasciculus: a study using voxel-based lesion-symptom mapping and intraoperative direct stimulation in right prefrontal glioma surgery.	Kinoshita et al.[66]	DES	spatial distribution; function map: cognition	24
2016	Connectome analysis for pre-operative brain mapping in neurosurgery.	Hart et al.[67]	tumor (glioma)	miscellaneous: constructed connectome; spatial distribution	5
2016	Anatomical specificity of vascular endothelial growth factor expression in glioblastomas: a voxel-based mapping analysis.	Fan et al.[68]	tumor (glioma)	spatial distribution; genetic subtype	209
2016	Inhibition processes are dissociable and lateralized in human prefrontal cortex.	Cipolotti et al.[69]	tumor (other)	spatial distribution: symptom map: language dysfunction, cognitive dysfunction	164
2016	Population-based MRI atlases of spatial distribution are specific to patient and tumor characteristics in glioblastoma.	Bilello et al.[70]	tumor (glioma)	spatial distribution; demographics	206
2016	Neurovascular uncoupling in resting state fMRI demonstrated in patients with primary brain gliomas.	Agarwal et al.[71]	tumor (glioma)	perfusion map	7

2015	Direct evidence from intraoperative electrocortical stimulation indicates shared and distinct speech production center between Chinese and English languages.	Wu et al.[72]	DES	spatial map; function map: language	66
2015	Transient aphasias after left hemisphere resective surgery.	Wilson et al.[73]	resection	spatial map; symptom map: language dysfunction	110
2015	The role of the corpus callosum in seizure spread: MRI lesion mapping in oligodendrogliomas.	Wieshmann et al.[74]	tumor (other)	spatial map; symptom map: seizure	21
2015	Localizing seizure-susceptible brain regions associated with low-grade gliomas using voxel-based lesion-symptom mapping.	Wang et al.[75]	tumor (glioma)	spatial map; symptom map: seizure	410
2015	Age-associated brain regions in gliomas: a volumetric analysis.	Wang et al.[76]	tumor (glioma)	spatial map; demographics; prognosis	400
2015	Anatomical localization of isocitrate dehydrogenase 1 mutation: a voxel-based radiographic study of 146 low-grade gliomas.	Wang et al.[77]	tumor (glioma)	spatial map; genetic subtype; prognosis	146
2015	Mapping p53 mutations in low-grade glioma: a voxel-based neuroimaging analysis.	Wang et al.[78]	tumor (glioma)	spatial map; genetic subtype; prognosis	182
2015	Towards a functional atlas of human white matter.	Sarubbo et al.[79]	DES	constructed connectome	130
2015	The neural network associated with lexical-semantic knowledge about social groups.	Piretti et al.[80]	tumor (other)	function map: cognition	20
2015	Expert-validated CSF segmentation of MNI atlas enhances accuracy of virtual glioma growth patterns.	Amelot et al.[81]	tumor (glioma)	growth pattern	N/A
2014	Anatomical localization of p53 mutated tumors: A radiographic study of human glioblastomas.	Zhang et al.[82]	tumor (glioma)	spatial distribution; genetic subtype	163
2014	Regional and voxel-wise comparisons of blood flow measurements between dynamic susceptibility contrast magnetic resonance imaging (DSC-MRI) and arterial spin labeling (ASL) in brain tumors.	White et al.[83]	tumor (general)	perfusion map	30
2014	Identifying radiographic specificity for phosphatase and tensin homolog and epidermal growth factor receptor	Wang et al.[84]	tumor (glioma)	spatial distribution; genetic subtype	140

	changes: a quantitative analysis of glioblastomas.				
2014	Anatomical specificity of O6-methylguanine DNA methyltransferase protein expression in glioblastomas.	Wang et al.[85]	tumor (glioma)	spatial distribution; genetic subtype	218
2014	Probabilistic map of critical functional regions of the human cerebral cortex: Broca's area revisited.	Tate et al.[86]	DES	spatial distribution; function map: language	165
2014	Inverse spatial distribution of brain metastases and white matter hyperintensities in advanced lung and non-lung cancer patients.	Quattrocchi et al.[87]	tumor (brain metastasis)	spatial distribution; primary tumor subtype	200
2014	Different spatial distribution between germinal center B and non-germinal center B primary central nervous system lymphoma revealed by magnetic resonance group analysis.	Kinoshita et al.[88]	tumor (lymphoma)	spatial distribution	100
2014	Differentiation of edema and glioma infiltration: proposal of a DTI-based probability map.	Hoefnagels et al.[89]	tumor (glioma)	spatial distribution; growth pattern	22
2014	Impact of brain tumour location on emotion and personality: a voxel-based lesion-symptom mapping study on mentalization processes.	Campanella et al.[90]	resection cavity	spatial distribution; symptom map: cognitive dysfunction	71
2013	Probabilistic radiographic atlas of glioblastoma phenotypes.	Ellingson et al.[91]	tumor (glioma)	spatial distribution; genetic subtype; prognosis	507
2012	Segregation of lexical and sublexical reading processes in the left perisylvian cortex.	Roux et al.[92]	DES	function map: language	14
2012	Spatial brain distribution of intra-axial metastatic lesions in breast and lung cancer patients.	Quattrocchi et al.[93]	tumor (brain metastasis)	spatial distribution; primary tumor subtype	114
2012	Higher incidence of epilepsy in meningiomas located on the premotor cortex: a voxel-wise statistical analysis.	Hamasaki et al.[94]	tumor (meningioma)	spatial distribution; symptom map: seizure	688
2011	Evidence for potentials and limitations of brain plasticity using an atlas of functional resectability of WHO grade II gliomas: towards a "minimal common brain".	Ius et al.[95]	DES	spatial distribution; function map: other	58
2008	Automated fiber tracking of human brain white matter using diffusion tensor imaging.	Zhang et al.[96]	tumor (general)	method: constructing connectome	10

2007	Preoperative estimation of residual volume for WHO grade II glioma resected with intraoperative functional mapping.	Mandonnet et al.[97]	DES	spatial distribution; function map: language	65
2007	A novel approach to clinical-radiological correlations: Anatomo-Clinical Overlapping Maps (AnaCOM): method and validation.	Kinkingnehun et al.[98]	tumor (general)	spatial distribution; function map: language	64
2005	Incorporating statistical measures of anatomical variability in atlas-to-subject registration for conformal brain radiotherapy.	Commowick et al.[99]	tumor (general)	method: segmentation	N/A
2003	Combined functional MRI and tractography to demonstrate the connectivity of the human primary motor cortex in vivo.	Guye et al.[100]	tumor (general)	method: constructing connectome	9
2001	Spatial normalization of brain images with focal lesions using cost function masking.	Brett et al.[101]	tumor (general)	method: normalization	N/A

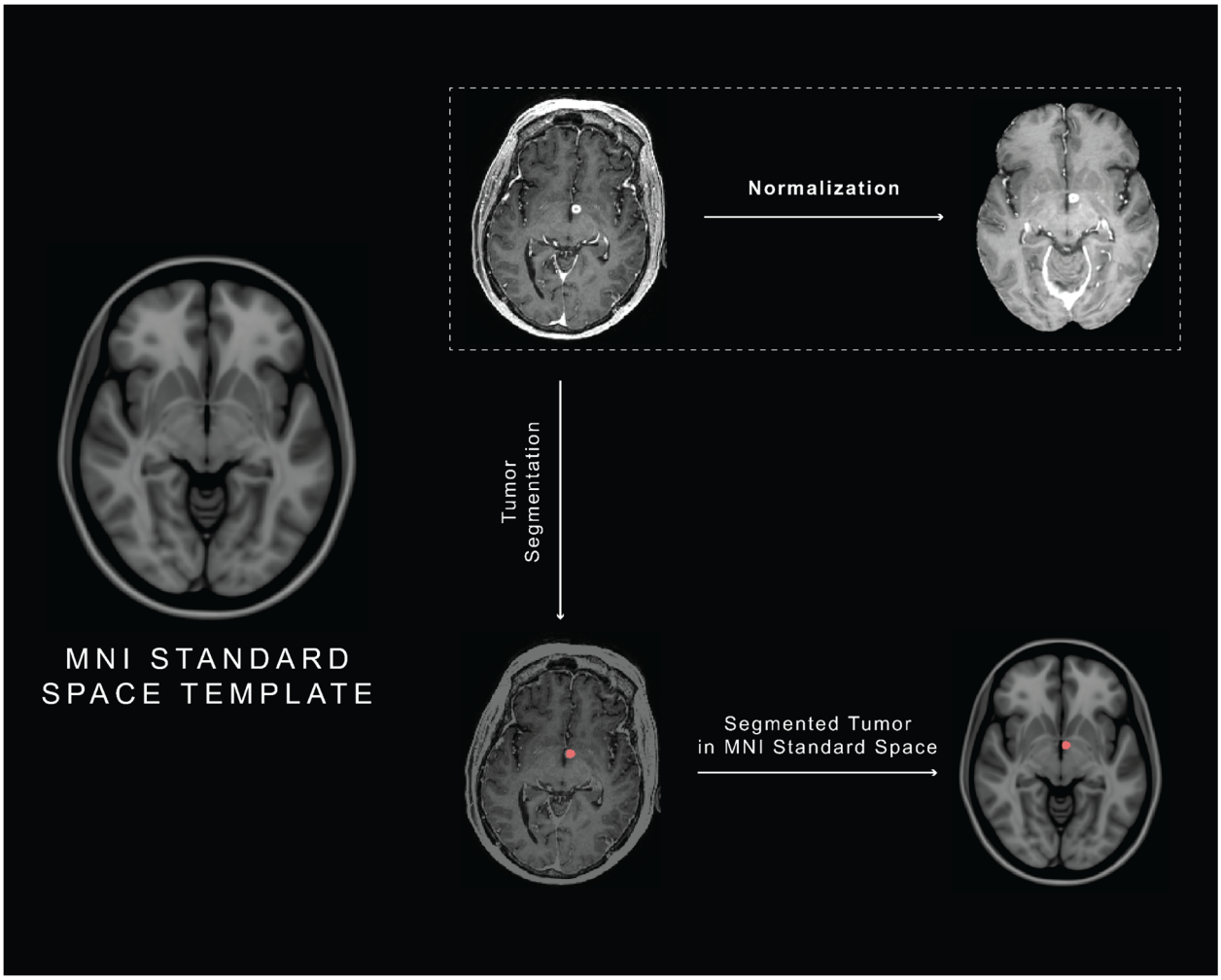

Figure S1. Normalization of brain tumor MRI to the Montreal Neurological Institute (MNI) common space template. Adapted with permission from Untapped Neuroimaging Tools for Neuro-Oncology: Connectomics and Spatial Transcriptomics (Jurgen et al., 2022)[102].

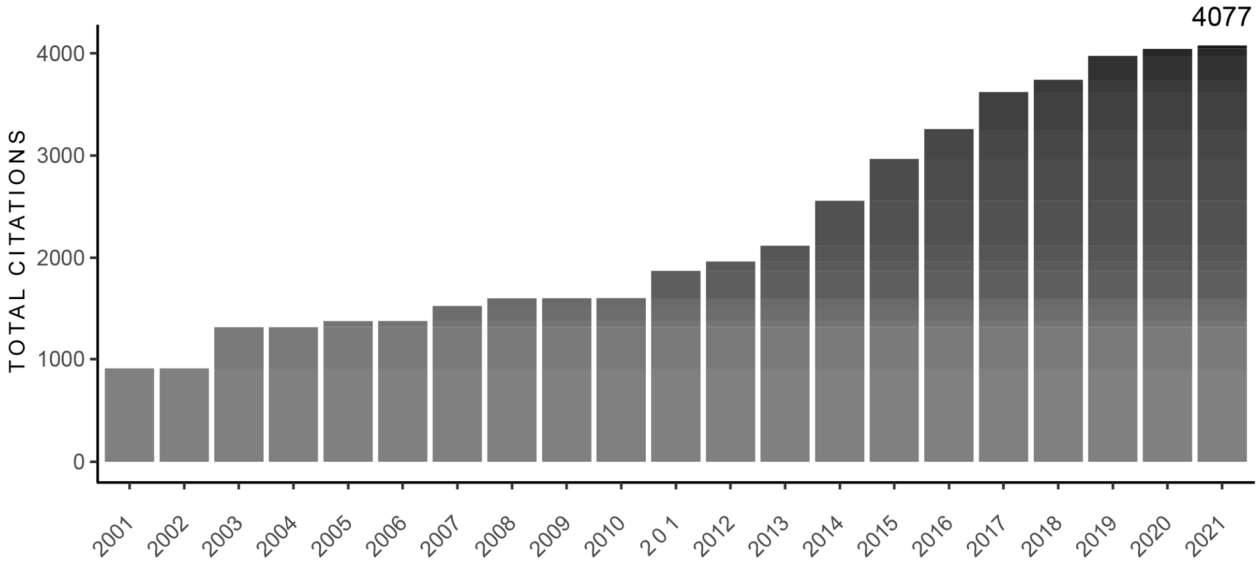

Figure S2. Cumulative citations over time.

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