

Resource Summary Report

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fMRI Research Center at Columbia

RRID:SCR_002658

Type: Tool

Proper Citation

fMRI Research Center at Columbia (RRID:SCR_002658)

Resource Information

URL: <http://www.fmri.org>

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Description: THIS RESOURCE IS NO LONGER IN SERVICE, documented on 7/28/13. Core facility of Columbia Neuroscience with the goal of establishing a collaborative and multi-investigator neuroimaging environment that is focused on the investigation of the neurocircuitry of the brain that underlies cognition, perception and action, and also the development of clinical applications that enhance the goals of personalized medicine. Within this environment the specific current research interests of the Hirsch group include several related directions of investigation. The first is conscious and subconscious neural processes that mediate emotion and cognition in healthy individuals and in patients with psychiatric disorders. This direction also includes neurocircuitry that is characteristic of disorders of consciousness such as minimally conscious or vegetative states, self and visual awareness, and attention. Neurocircuitry of other complex cognitive processes such as decisions, inductive and deductive reasoning, language, truthfulness and top-down influences of expectation, reward, and regulation on early visual and mid-level perceptual and emotional systems. On-going projects targeted for clinical applications include benefits for neurosurgery such as the development of task batteries to map the cortical locations of essential functions such as language, motor, sensation, memory, emotion and sensory functions including visions, audition and the chemical senses. Computational innovations for labeling correspondence between brain structure and specific functional regions are under development to achieve the highest interpretive precision. Current projects include integration of EEG and fMRI techniques to localize seizuregenic cortex in relation to eloquent and functioning cortex for neurosurgical planning; integration of TMS and fMRI to discriminate essential and associative language-sensitive cortical areas; and integration of VEP, EEG and fMRI to inform assessments of visual disease secondary to stroke or neural degeneration. Projects intended to refine and enhance diagnosis of psychiatric disorders such as anxiety, depression, and eating disorders include development of specialized paradigms to target dysfunctional neurocircuitry such as emotional systems (amygdala and basal ganglia) and control and regulatory systems (cingulate and pre-frontal cortex). Comparison of before-treatment images with after-

treatment images to inform models of both treatment and disease and investigation of the hypothesis that individual genetic and functional differences have predictive value for treatment options and outcome are currently underway. The lab has pioneered techniques for functional mapping of single patients, and operates an active clinical service for mapping individuals for neurosurgical planning, assessments of the neurocircuitry that underlie acquired or inherited disabilities and the mechanisms of neuroplasticity that restore lost functions are actively investigated using both groups and single subject studies. :

Abbreviations: PICS

Synonyms: Program for Imaging and Cognitive Sciences, Program for Imaging & Cognitive Sciences

Resource Type: access service resource, core facility, service resource

Keywords: fmri, imaging, neuroscience, cognitive sciences, cognition, perception, action, clinical, personalized medicine, neuroimaging, neurocircuitry, brain, vep, eeg

Availability: THIS RESOURCE IS NO LONGER IN SERVICE

Resource Name: fMRI Research Center at Columbia

Resource ID: SCR_002658

Alternate IDs: nif-0000-00405

Record Creation Time: 20220129T080214+0000

Record Last Update: 20260805T044043+0000

Ratings and Alerts

No rating or validation information has been found for fMRI Research Center at Columbia.

No alerts have been found for fMRI Research Center at Columbia.

Data and Source Information

Source: [SciCrunch Registry](#)

Usage and Citation Metrics

We found 40 mentions in open access literature.

Listed below are recent publications. The full list is available at [PRECISE-TBI](#) .

Xiong D, et al. (2025) Inflammatory Response and Anti-Inflammatory Treatment in Persistent Inflammation-Immunosuppression-Catabolism Syndrome (PICS). Journal of inflammation research, 18, 2267.

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- Bergmann J, et al. (2024) Outcome, predictors and longitudinal trajectories of subjects with critical illness polyneuropathy and myopathy (CINAMOPS): study protocol of an observational cohort study in a clinical and post-clinical setting. *BMJ open*, 14(4), e083553.
- Li Z, et al. (2023) Persistent inflammation-immunosuppression-catabolism syndrome in patients with systemic lupus erythematosus. *International urology and nephrology*, 1.
- Atia J, et al. (2023) Does acute kidney injury alerting improve patient outcomes? *BMC nephrology*, 24(1), 14.
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- Kandel ME, et al. (2020) Phase imaging with computational specificity (PICS) for measuring dry mass changes in sub-cellular compartments. *Nature communications*, 11(1), 6256.

Zhang X, et al. (2020) Optimization of wavelet coherence analysis as a measure of neural synchrony during hyperscanning using functional near-infrared spectroscopy. *Neurophotonics*, 7(1), 015010.

Mayer KP, et al. (2020) ICU Recovery Clinic Attendance, Attrition, and Patient Outcomes: The Impact of Severity of Illness, Gender, and Rurality. *Critical care explorations*, 2(10), e0206.

Coleman JJ, et al. (2020) Bringing into focus treatment limitation and DNACPR decisions: How COVID-19 has changed practice. *Resuscitation*, 155, 172.

Hirsch J, et al. (2020) Interpersonal Agreement and Disagreement During Face-to-Face Dialogue: An fNIRS Investigation. *Frontiers in human neuroscience*, 14, 606397.