JUNIOR INVESTIGATOR RESEARCH AWARD

BACKGROUND AND PURPOSE
The American Epilepsy Society (AES) recognizes the critical importance of new and early stage researchers. Junior Investigator Research Awards support epilepsy research by recently independent investigators and are intended to facilitate successful competition for subsequent longer-term support from the NIH or other sources. Proposals are welcome across the spectrum of basic, translational, and clinical epilepsy research, including studies of disease mechanisms or treatments, epidemiologic or behavioral studies, the development of new technologies, and health services and outcomes research.

This award provides up to $50,000 for one year to support the direct costs of research. In addition, the award includes complimentary registration to the AES Annual Meeting and one year of complimentary membership to AES. The number of awards granted each year is contingent upon available funds.

TRAVEL GRANTS
Applicants for the postdoctoral fellowship have the option of applying for an additional travel award to attend a high-quality training course or conference to supplement the training received during their award. Priority will be given to opportunities for hands-on training experiences. More details are available here. Applications for this supplemental travel support must be made at the time of full proposal submission.

CONTRIBUTING PARTNERS
In addition to funding from AES, these awards may be supported by non-profit partners.

- The Epilepsy Foundation has a long-standing commitment to early career scientists and will support between 1 to 3 proposals in full.
- Additional non-profit partners listed here may choose to support top-scored research proposals that align with the mission of their organization.

AES is proud to partner with other non-profit organizations to make dollars go further to support epilepsy researchers. If you grant permission during your application process, your application and its materials may be confidentially shared with these and other non-profit partners to consider for full or partial support.

APPLICATION DEADLINES AND AWARD DATES
- November 1, 2018: Concise LOI submission opens through proposalCENTRAL
- December 20, 2018: Concise LOI submission deadline
- January 8, 2019: Applicants invited to submit full proposals, following eligibility screen
- January 31, 2019: Full proposals due
- May 2019: Award notifications sent out
- July 1, 2019: Earliest start date. May be delayed up to 3 months.

APPLICATION POLICIES
1. Prior unfunded applicants may reapply, but all applications will be treated as new submissions.
2. An individual may only serve as the primary mentor for one application submitted for a mentored award. An individual may not apply for a Junior Investigator Research Award and also be listed as the primary mentor on a proposal for a mentored award.
3. More than one application may be submitted from a single institution, but final funding decisions will take into account a preference to limit multiple awards to one institution.
4. Only applicants with an approved Letter of Intent (LOI) are eligible to submit a full proposal.
5. Applicants may request a delay in the start date of up to 3 months.

**ELIGIBILITY CRITERIA**

Applicants must:

1. Hold a M.D., Ph.D., Sc.D., PharmD, RN, or equivalent degree.
2. Have an academic appointment at the level of Assistant Professor or equivalent at a university, medical school, research institution, or medical center. Researchers with other early faculty appointments (such as Instructor, Adjunct Track, etc.) may apply but are strongly encouraged to provide a letter of support from their department chair. Postdoctoral associates, postdoctoral fellows, clinical fellows, and researchers appointed to the position of associate professor or higher are not eligible. Clinicians with faculty appointments who desire a mentored research experience should instead apply for the AES Research and Training Fellowship for Clinicians.
3. Not currently hold or have previously received a larger, multi-year award for independent research, such as an NIH R01 grant
4. Have a defined research plan and access to institutional resources to conduct the proposed project.
5. Have not previously been awarded an American Epilepsy Society or an Epilepsy Foundation Junior Investigator Award or Research Grant.
6. Not be listed as the primary mentor on a proposal for a mentored research award by AES. The policy for AES awards is to allow only one proposal to be considered each year from any given laboratory.

In addition:

5. Physician applicants whose research will involve patient care or direct involvement with patients must have completed all residency training and be licensed to practice medicine at their institution.
6. U.S. citizenship is not required; however, all research must be conducted in the U.S.
7. Applications are encouraged from women, members of minority groups, and people with disabilities.

**EVALUATION CRITERIA**

Significance

- Does the proposed project address an important problem or crucial barrier in the epilepsy field, for example as framed by the [2014 NINDS Benchmarks for Epilepsy Research](https://epilepsy.org/sites/default/files/2014-ninds-benchmarks-for-epilepsy-research.pdf) or the [Institute of Medicine 2012 research recommendations around public health for epilepsy research](https://www.nap.edu/read/13009/chapter/2)?
- If the aims of the project are achieved, how will scientific knowledge, technical capability, and/or clinical practice be improved?

Applicant

- Does the applicant have appropriate experience and training and potential for further success as an independent researcher?
- Are the collaborators and other researchers well suited to the project?

Innovation

- Does the application challenge and seek to shift current research or clinical practice paradigms by utilizing novel theoretical concepts, approaches or methodologies, instrumentation, or interventions?
- What is the strength of the scientific premise, i.e. the quality and strength of the prior research used as a basis for the proposed research question? Please refer to [NIH guidelines](https://grants.nih.gov/grants/policy/niwhelp/determination.jsp) for more clarification.

Approach
Is the research project well-conceived with rigor in experimental design, methodology, analysis, interpretation, and reporting of results? Does it include clear hypotheses and potential alternative outcomes? Does it consider key biological variables like gender and include authentication of key biological and/or chemical resources, if appropriate, as defined by the NIH guidelines on rigor & transparency?

Are the overall strategy, methodology, and analyses well-reasoned and appropriate to accomplish the specific aims of the project?

Does the proposed research include a data-sharing plan? While not required, it can provide added value to the work.

Environment

Are the institutional support, equipment, and other physical resources available to the applicant adequate for the proposed project as an independent primary investigator rather than a mentee in another laboratory?

Will the project benefit from unique features of the scientific environment, subject populations, or collaborative arrangements?

AWARD POLICIES

Funding Support
Successful applicants receive up to $50,000 for one year, plus complimentary registration to the Annual Meeting of the American Epilepsy Society. Quarterly payments are made to the institution, and the funds may only be used to support the direct costs of research. Allowable use of grant funds includes: salary for the principal investigator and for scientific personnel directly engaged in the research project; consumable supplies, disposables, and animals necessary to fulfill the project’s specific aims; and travel related to the conduct of the research or for the purpose of presenting the results of the research at appropriate scientific or medical meetings. Travel must be conducted during the funding period.

Grant funds MAY NOT be used for: indirect costs or institutional overhead; purchase of permanent equipment that exceeds 10% of the budget; payment of salaries of collaborators at other institutions; or membership dues, subscriptions, books, or journals. Submission of scientific and financial reports upon completion of the project is a requirement of this award.

Support from Other Sources
An applicant may not apply for, use, or accept funds for a research project or part of a project already supported by funds from another public or private source. Accordingly, full disclosure of all available and pending funds for research support must be made in the grant application. If funds from other sources become available during the review or tenure of the Junior Investigator Research Award, the applicant/recipient must inform AES in writing so that a decision can be made about continuation of the award.

Use of Human Subjects/Tissues in Research
When human subjects or tissues are to be used in a research project, it is the responsibility of the grantee to ensure that the project receives approval from his/her Institutional Review Board. A copy of that Board’s current approval notice and a copy of the patient informed consent form should be submitted with the application if they are available. If not submitted with an application selected for an award, these documents must be submitted before funding can begin. If the research plan has already been approved or exempted by an IRB, because the grantee’s proposed workplan is encompassed by an existing research project grant, then this documentation will be sufficient provided that the IRB concludes that the participation of the grantee does not lead to a substantial modification of the research plan.

Use of Animals in Research
When animals and/or animal tissues will be used, it is the responsibility of the grantee to ensure that the project receives approval from the Institutional Animal Care and Use Committee. If available, a copy of these documents should be submitted with the application. If not submitted with an application selected for an award, these documents must be submitted before funding can begin. If the research plan has already been approved or exempted by an IACUC, because the grantee’s proposed workplan is encompassed by an existing research project grant, then this documentation will be sufficient provided that the IACUC concludes that the participation of the grantee does not lead to a substantial modification of the research plan.

All entities that receive funding from the American Epilepsy Society must adhere to the following principles:
1. Animals shall be used in biomedical research only when no other means of obtaining scientifically sound, valid, and useful results are available.
2. The minimum number of appropriate animals required to obtain and validate results shall be used.
3. The acquisition, care, and use of animals must be in accordance with all applicable federal, state and local laws and regulations.
4. Certifications must be received from research facilities prior to being approved for a research fellowship that the facility(ies), its researchers, and employees adhere to the Animal Welfare Act and the National Research Council Guide for the Care and Use of Laboratory Animals; and any appropriate U.S. Department of Agriculture or National Institutes of Health regulations and standards must be followed.
5. In cases requiring the death of an animal, only the most appropriate and humane form of euthanasia shall be used consistent with the purpose of the research.

APPLICATION INSTRUCTIONS

Letter of Intent: due by December 20, 2018

Only applicants who have submitted a LOI and receive approval are eligible to submit a full grant application. New in 2018 – no research & training plan is required for the letter-of-intent (LOI). LOI will be evaluated solely for the applicant’s eligibility for the grant mechanism.

LOIs must be submitted through proposalCENTRAL (https://proposalcentral.altum.com/).

- Applicants who do not yet have an account with proposalCENTRAL will need to register as a new user and provide the requested professional profile information before proceeding.
- Once logged in as a user, go to the Grant Opportunities tab, and filter the list to display American Epilepsy Society Awards.
- Locate the line for AES Junior Investigator Research Award (LOI) and click on Apply Now to begin an application.

Questions?

- For technical difficulties with proposalCENTRAL, please contact their help desk at pcsupport@altum.com or 1-800-875-2562 (toll-free US & Canada).
- For questions about your application and the review process, contact Susan Fargo at grants@aesnet.org.

Required components of the LOI include the following sections to be completed as online forms or submitted as individual proposal attachments in PDF format. Additional instructions will be available on screen in proposalCENTRAL and within downloadable templates for proposal attachments.

1. Title Page:
   a. Enter the title of your proposal (max 80 characters)
b. **Research Type** *(basic, translational, or clinical).* Definitions for the categories are available at the end of these instructions (p9). Multiple categories are often relevant to an individual project. Please select one category as the primary type of research that best fits your proposal and then indicate in the boxes below what percentage of your research falls within each category. This information will not influence your eligibility or the review of your proposal.

c. **Type of epilepsy or seizure under investigation** While multiple categories may be relevant to an individual project, please select a maximum of two choices (one primary and one secondary) that best fit your proposal. This information will not influence your eligibility or the review of your proposal, other than to help select appropriate reviewers.

d. **Categorize your research based on its classification.** Definitions for the research classifications are available at the end of these instructions (p9). While multiple categories may be relevant to an individual project, please select up to two choices (one primary and one secondary) that best fit your proposal. This information will not influence your eligibility or the review of your proposal, other than to help select appropriate reviewers.

e. **AES Funding Partners.** In addition to the American Epilepsy Society, one or more funding partners including the Epilepsy Foundation may provide full or partial support for proposals in targeted research areas through this program (see Contributing Partners above). Please confirm whether we may share your application with these and other relevant funding partners for consideration of funding. If you choose not to grant permission, your proposal will still be accepted and reviewed for possible funding by the American Epilepsy Society.

f. **Other sources of funding.** Please indicate whether the proposed work overlaps with that covered by another source of funding, either for the applicant or mentor. List other funding sources accordingly.

2. **Download Templates and Instructions:** All proposal attachment templates and this application guideline document can be downloaded here from proposalCENTRAL.

3. **Enable Other Users to Access This Proposal:** This screen allows you to give other users access to your grant application, such as financial officers at your institution. Please inquire internally in your department and your institution’s Office of Sponsored Projects (or corresponding office) to understand who should be able to access your proposal.

4. **Applicant/PI:** Applicant information is pre-loaded from the applicant’s PROFESSIONAL PROFILE. Double-check that the information is complete and correct. If not, click Edit Professional Profile to update.

5. **Institution and Contacts:** Institution information is pre-loaded from the applicant’s INSTITUTIONAL PROFILE. Double-check that the information is complete and correct. If not, click Edit Institutional Profile to update.

6. **Abstracts and Keywords:**
   a. Describe the proposed research project for both general (lay) and scientific audiences (1500 characters maximum for each abstract).
   b. Please select keywords that describe the specific focus of your research. At least two keywords are required, and up to five are allowed. Please select keywords carefully, as they will aid in matching your application to appropriate reviewers.

7. **Proposal Attachments** *(must be uploaded as PDFs; templates available for download)*
   a. **Applicant biosketch:** Provide using NIH-style format.
   b. **Letters-of-support (optional; only if needed to ascertain eligibility).** If the applicant does not hold a tenure track assistant professor faculty position but instead holds a position of Instructor, Research Assistant, Research Scientist, Adjunct Track, etc, they are strongly encouraged to provide a letter(s) of support to confirm institutional commitment and resources available to the applicant for an
independent research project. The applicant will have the opportunity to submit other letters-of-support at the time of the full proposal.

8. Demographic Information (optional):
   a. **ORCID ID**: Please provide your ORCID ID through your professional profile (within Personal Data for Applications). If you do not already have an ORCID ID, you may create one through the provided link in the bottom of the Personal Data for Applications file. The ORCID ID is a persistent digital identifier that distinguishes you from other researchers, helping to ensure that your professional activities over time are linked to your identity. Learn more at https://orcid.org/.
   b. **All demographic information is voluntary.** AES is committed to supporting a strong, diverse, and inclusive research workforce. If you choose to provide information such as gender, race and ethnicity, or disability status, it will be used to help AES understand our granting programs through analysis of de-identified aggregated data. Such demographic information will not be available to the reviewers of your research proposal.

**FULL PROPOSALS: DUE BY JANUARY 31, 2019**

Proposals must be submitted through proposalCENTRAL. No applications, nor any parts of or updates to the application, will be accepted if submitted after the deadline or if sent directly to AES offices by electronic or U.S. mail.

Only applicants who have submitted a LOI and receive approval are eligible to submit a full proposal. To begin your proposal, log in to proposalCENTRAL and select the MANAGE PROPOSALS tab, which contains a list of applications IN PROGRESS. The status of approved LOIs will appear as LOI: APPROVED. Click the EDIT button to begin preparing a full proposal.

**Questions?**
- For technical difficulties with proposalCENTRAL, please contact their help desk at pcsupport@altum.com or 1-800-875-2562 (toll-free US & Canada).
- For questions about your application and the review process, contact Susan Fargo at grants@aesnet.org.

*Please read these full instructions carefully and plan in advance to ensure all components will be complete at the time you submit your proposal.* Additional instructions will be available on screen in proposalCENTRAL and within downloadable templates for proposal attachments. Required components of the application include the following sections to be completed as online forms or submitted as individual proposal attachments in PDF format.

1. **Title Page:**
   a. The APPLICATION TITLE, research classification information, and other responses submitted with your LOI will be pre-populated but can be edited. Please confirm that the information is correct and update as needed.
   b. Enter the start and end date requested for your project. In general, the award term should be July 1, 2019-June 30, 2020. However, a delay of up to 3 months (beginning no later than October 1, 2019) in the start date is permitted if necessary.
   c. Indicate if you intend to apply for the optional Travel Award supplement.

2. **Download Templates and Instructions:** This guidelines document and all proposal attachment templates can be downloaded here.
3. Enable Other Users to Access This Proposal: This screen allows you to give other proposalCENTRAL users access to your grant application, if necessary. Please inquire internally at your institution, such as your department and Office of Sponsored Projects (or corresponding office), to understand who, if anyone, should be able to access your proposal.

4. Applicant/PI: This information is pre-loaded from the applicant's PROFESSIONAL PROFILE. Double-check that the information is complete and correct. If it is not, click Edit Professional Profile to update.

5. Institution and Contacts:
   a. Institution information is pre-loaded from the applicant’s INSTITUTIONAL PROFILE. Double-check that the information is complete and correct. If it is not, click Edit Institutional Profile to update.
   b. Enter the requested contacts in the table provided. Select the appropriate signing official and financial officer from the drop-down list or enter the email address of a new official and click on ADD, then complete the contact information form and SAVE and CLOSE WINDOW. The added official will be listed as the assigned signing official or financial/fiscal officer. Enter the correct contact and address to which award payments should be sent if this proposal is selected for funding.

6. Key Personnel: Indicate all key personnel other than the applicant/PI who will contribute significantly to the execution of the proposal.

7. Letters of Reference: Use this section to request blind submission of support letters from references familiar with your research and training. Please start this process early to ensure letters are submitted by the application deadline. Two letters of reference are required.

8. Abstracts and Keywords: This information is pre-loaded from the LOI submission. Please review and make edits as needed.
   a. Describe the proposed research project for both general (lay) and scientific audiences (1500 characters maximum for each abstract).
   b. Please select keywords that describe the specific focus of your research. Two keywords are required, and up to five keywords are allowed. Please select keywords carefully, as they will aid in matching your application to appropriate reviewers.

9. Budget Period Detail: Use this section to provide a detailed budget by listing costs under the headings provided.

10. Budget Summary: This page summarizes the information provided in the Budget Detail.

11. Organization Assurances: Use this section to indicate use of human subjects, human tissue, or vertebrate animals, and to confirm institutional assurances. All assurances should be provided at the time of the application if available, and documentation must be provided before funding can begin for awarded proposals. See Award Policies above for more information.

12. Proposal Attachments: Attachments must be uploaded as PDFs. Where noted, templates will be available for download on proposalCENTRAL. Select the appropriate attachment type and upload as instructed onscreen.
   a. Signed Signature Page: You will need to download this item in the SIGNATURE PAGE(S) section and have signed by the designated signing official (required) from the institution's sponsored research office (or equivalent), and then re-upload the signed page as a proposal attachment. The sections of the signature page will populate from the corresponding application sections above. Please make sure the fields on the Signature Page are complete before having it signed.
   b. Applicant biosketch: Provide using NIH-style format appropriate to applicant career stage. Biosketches should also be submitted for consultants or collaborators.
c. **Research Plan:** Please use the template provided and include the following elements: specific aims, background and significance, previous work directly related to this research (if available), research plan and methods, and data-sharing plan (if any). Refer to p2-3 of these application guidelines to view the evaluation criteria for this section. Use at least 11 pt font and at least ½ inch margins. Maximum 6 pages, not including references.

d. **Other Support:** Please use the template provided to list all other past (last 3 years), current, and pending support for the applicant’s research. Other Support includes: all financial resources available in direct support of an individual's research and/or research training, including but not limited to research grants, research training fellowship awards, cooperative agreements, contracts, and/or institutional awards. Recognition awards, prizes, or gifts do not need to be included.

e. **Facilities Available:** Provide a profile of the institutional environment and the facilities available. Use at least 11 pt font and at least ½ inch margins. (no page limit)

f. **Budget Justification:** Provide a justification of your proposed budget by briefly describing each of the cost headings listed in your Budget Summary table. Use at least 11 pt font and at least ½ inch margins. (no page limit)

g. **Other proposal attachments (optional):** Examples of additional optional attachments (if applicable) include letters of support from collaborators or consultants, or documentation related to approval for the use of vertebrate animals or human subjects. (See Policies and Procedures; IRB/IACUC documentation will be required prior to funding if selected for an award).

h. **Travel Award application (optional):** If you indicated on the Title Page that you would like to apply for the Travel award, you may upload a one-page pdf here to request additional support of $2000-$4000 for a travel award to enhance your research and training experience. The pdf that you load should be no more than one page, 11pt font, minimum of ½ inch margins. It should identify the meeting to which you would like to travel and explain why this travel would offer an important training opportunity for your career. Include a budget with projected costs for attending the meeting including travel, registration, etc. Explain whether other sources of funding are available for this travel, including whether the remaining costs could be covered if the AES travel award does not full cover the costs of the meeting.

   More information on these travel awards, including eligibility and evaluation criteria, can be found at the AES website. These travel awards are not intended to support travel to the annual AES meeting but instead to other training workshops in research methodology or to high quality research conferences. Hands-on training experiences will be given priority.

**13. Validate:** Click the VALIDATE button to check for any missing REQUIRED information or files. All missing required information will be listed on the screen. Please correct any missing information before submitting your application.

**14. Submit:** You will be unable to submit if you have not provided all the required information. Any missing information will be listed on the screen. If your submission is successful, you will receive a confirmation message on the screen and a confirmation email will be sent to the applicant.

**CONTACT INFORMATION**

If you encounter technical difficulties with proposalCENTRAL, please contact their help desk at pcsupport@altum.com or 1-800-875-2562 (toll-free US & Canada).

If questions arise about your application and the review process, contact Susan Fargo at grants@aesnet.org.
Category lists and definitions, for fields to be completed on the Title Page.

<table>
<thead>
<tr>
<th>Research Type</th>
<th>Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic</td>
<td>Basic research is the systematic study of the fundamental aspects of phenomena and of observable facts without specific development of processes, products or clinical applications. Projects typically include studies of the mechanisms of normal or disease related processes at the molecular, cellular, systems or organ level.</td>
</tr>
<tr>
<td>Translational</td>
<td>Translational research is defined here as research to actively develop and/or refine specific processes, products, clinical applications, and implementation practices that can ultimately be used by patients or healthcare providers.</td>
</tr>
<tr>
<td>Clinical</td>
<td>Patient-oriented research, possibly with basic or translational goals, that is conducted with human subjects or on material of human origin (e.g. tissues, specimens and cognitive phenomena) for which an investigator directly interacts with human subjects. Excluded from this definition are in vitro studies that utilize human tissues but cannot be linked to a living individual. Patient-oriented research can encompass physical or behavioral aspects of epilepsy, therapeutic interventions, applications of new technologies, clinical trials, epidemiologic studies, outcomes research, public health, and health services research.</td>
</tr>
</tbody>
</table>

Epilepsy or Seizure Type. This listing has been revised from previous years in response to the [2017 Classification of Seizures Types](#) by ILAE.

- Seizures – Focal or localization-related
- Seizures – Generalized
- Seizures – combined generalized & focal
- Seizures – unknown type
- Seizures – catamenial
- Seizures – early life
- Seizures – febrile
- Seizures – neonatal
- Seizures – Status Epilepticus
- Seizures – other
- Seizures in childhood
- Seizures in pregnant women
- Seizures in geriatric populations
- Seizures in other disorders (e.g. Alzheimer’s, Autism, alcohol abuse, addiction, renal failure, hepatic encephalopathy, Fragile X)
- Epilepsy – Autosomal Dominant Epilepsy w Auditory Features (ADEF)
- Epilepsy – Autosomal-Dominant Nocturnal Frontal Lobe Epilepsy (ADNFLE)
- Epilepsy – Childhood Absence Epilepsy (CAE)
- Epilepsy – Childhood Epilepsy with Centrottemporal Spikes (formerly BECTS)
- Epilepsy – Dravet Syndrome
- Epilepsy – Early Myoclonic Encephalopathy (EME)
- Epilepsy – Epileptic Encephalopathies
- Epilepsy – Genetic Epilepsy with Febrile Seizures plus (GEFS+)
- Epilepsy – Hemiconvulsion–Hemiplegia–Epilepsy
- Epilepsy – Infantile Spasms (IS)
- Epilepsy – Juvenile Absence Epilepsy (JAE)
- Epilepsy – Juvenile Myoclonic Epilepsy (JME)
- Epilepsy – KCNQ2 Encephalopathy
- Epilepsy – Landau-Kleffner syndrome (LKS)
- Epilepsy – Lennox-Gastaut Syndrome (LGS)
- Epilepsy – Ohtahara Syndrome
- Epilepsy – Polyhydramnios, Megalencephaly and Symptomatic Epilepsy Structural Syndrome (PMSE)
- Epilepsy – Progressive Myoclonus Epilepsies (PME)
- Epilepsy – Reflex Epilepsies
- Epilepsy – Self-limited neonatal seizures or familial neonatal epilepsy (formerly BFNE)
- Epilepsy – Temporal Lobe Epilepsy (TLE)
• Epilepsy – Unknown or other
• Epilepsy – West Syndrome
• Etiology – celiac disease, epilepsy, and cerebral calcification syndrome
• Etiology – Encephalitis
• Etiology – genetic
• Etiology – Alpers Syndrome
• Etiology – Angelman Syndrome
• Etiology – Lafora disease
• Etiology – other
• Etiology – PCDH19 Epilepsy
• Etiology – SCN8A
• Etiology – immune
• Etiology – anti-AMPA receptor antibody
• Etiology – anti-LGI antibody
• Etiology – antibody-mediated
• Etiology – anti-GABA-B receptor antibody
• Etiology – anti-GAD65 antibody
• Etiology – anti-NMDA receptor encephalitis
• Etiology – Rasmussen encephalitis
• Etiology – voltage-gated potassium channel antibody
• Etiology – infectious
• Etiology – Bacterial meningitis / meningoencephalitis
• Etiology – Cerebral malaria
• Etiology – cerebral toxoplasmosis
• Etiology – CMV
• Etiology – HIV
• Etiology – Neurocysticercosis
• Etiology – Nodding Syndrome
• Etiology – other/unknown
• Etiology – Tuberculosis
• Etiology – metabolic
• Etiology – Biotinidase and holocarboxylase synthase deficiency
• Etiology – central folate deficiency
• Etiology – creatine disorders
• Etiology – folinic acid responsive seizures
• Etiology – glucose transporter 1 (GLUT1) deficiency
• Etiology – mitochondrial disorders
• Etiology – peroxosomal disorders
• Etiology – pyridoxine dependent epilepsy/PNPO deficiency
• Etiology – Succinic Semialdehyde Dehydrogenase Deficiency
• Etiology – steroid responsive encephalopathy with autoimmune thyroiditis (Hashimoto disease)
• Etiology – structural
• Etiology – Hypothalamic Hamartoma with Gelastic Seizures
• Etiology – Malformations of Cortical Development
• Etiology – other/unknown
• Etiology – Sturge-Weber Syndrome
• Etiology – Tuberous Sclerosis Syndrome
• Etiology – Post-traumatic epilepsy (PTE)
• Etiology – hypoxia-ischemia
• Comorbidity or consequence
• Comorbidity or consequence – behavioral, psychosocial, or cognitive co-occurring condition
• Comorbidity or consequence – SUDEP
• Epilepsy imitator – headache
• Epilepsy imitator – movement disorders
• Epilepsy imitator – Non-Epileptic Events
• Epilepsy imitator – paroxysmal non-epileptic event
<table>
<thead>
<tr>
<th>Research Classification</th>
<th>Definitions</th>
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<tbody>
<tr>
<td>Etiology</td>
<td>Research included in this category aims to identify the causes or origins of epilepsy and its co-occurring conditions - genetic, infectious,</td>
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<td></td>
<td>genetic, infectious, metabolic, environmental, or other factors, and the interactions between these factors.</td>
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<tr>
<td>Mechanism of Disease</td>
<td>Research included in this category looks at the biology of how epilepsy/seizures starts and progresses as well as normal biology relevant to</td>
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<td>these processes. Research may also look at the biology of co-occurring conditions as they relate to epilepsy patients, such as depression, anxiety,</td>
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<td>autism, Alzheimer’s, and traumatic brain injury.</td>
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<tr>
<td>Prevention</td>
<td>Research included in this category looks at identifying interventions which reduce the risk of developing epilepsy or its co-occurring</td>
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<td>conditions by reducing exposure to risk factors and/or increasing protective factors. Interventions may target lifestyle or behavioral</td>
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<td>changes and may involve drugs, devices, or vaccines.</td>
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<tr>
<td>Detection/Diagnosis/Prognosis</td>
<td>Research included in this category focuses on identifying and testing biomarkers, technology methods or predictive models that are helpful in</td>
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<td>detecting and/or diagnosing as well as predicting the outcome or chance of recurrence of seizures and/or co-occurring conditions.</td>
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<tr>
<td>Treatment Development or Evaluation</td>
<td>Research included in this category focuses on developing and testing treatments, such as novel therapeutics, devices or other interventions</td>
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<td></td>
<td>to target seizures and co-occurring conditions.</td>
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<tr>
<td>Outcomes</td>
<td>Research included in this category includes a broad range of areas: surveillance and epidemiology; ethics, education and communication</td>
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<tr>
<td></td>
<td>approaches for health care professionals, patients and families, and community members; patient care and health care services research; self-management interventions, effectiveness research and phase 4 trials</td>
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<tr>
<td>Model Systems</td>
<td>Research included in this category looks at the development of new animal models, cell cultures and computer simulations and their</td>
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<td></td>
<td>application to other studies across the spectrum of epilepsy research.</td>
</tr>
<tr>
<td>New Technology and Methodology</td>
<td>Research included in this category is primarily focused on developing new technologies and methodologies for use in epilepsy research,</td>
</tr>
<tr>
<td></td>
<td>clinical care, or self-management.</td>
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</tbody>
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