



Autism Speaks Request for Applications
Treatment Research Grants: Full- and Pilot-Level
2012 Cycle

Submission, Review, & Notification Schedule (subject to change):

Letter of Intent due: February 23, 2012, 8:00 PM Eastern
Letter of intent notifications: April 1, 2012
Application due: May 2, 2012, 8:00PM Eastern

Peer review panels: July 2012
Notifications: October 2012
Earliest Grant start date: November, 2012

I. Introduction

Autism Speaks invites both **Full- and Pilot-Level Treatment** research grant applications to conduct *innovative* clinical studies of novel interventions for individuals with Autism Spectrum Disorders (ASD) throughout the lifespan. These may include medical approaches including complementary and alternative forms of health care and pharmacological treatments, as well as behavioral and/or psychosocial interventions, and evaluation of the efficacy, safety or therapeutic benefits of all types of interventions. Also appropriate are animal model studies that test the effects of novel compounds for reducing autism symptoms.

For all RFAs, Autism Speaks is focusing on a set of targeted research priorities for 2012. All treatment study projects will be required to demonstrate direct relevance to at least one of these targeted research priorities:

1. Understand **environmental risk factors** and their interaction with genetic susceptibility to enable prevention and improve diagnosis and treatment
2. Discover **biomarkers** that can improve risk assessment and subtype stratification that will allow for an individualized approach to treatment
3. Improve quality of life through **more effective medicines, behavioral interventions, and technologies**
4. Enhance diagnosis and treatment of underserved and under-studied populations, specifically,
 - **Nonverbal** persons with ASD
 - **Ethnically-diverse** and/or low resource communities
 - **Adults**
 - Those with **medical co-morbidities**
5. **Disseminate and implement evidence-based clinical practices** to the broader community worldwide

IMPORTANT: The relevance of the proposed research to ASD and Autism Speaks' research priority areas must be explicitly described in the Letter of Intent (LOI) and full application. For more information on the 2012 research priority areas refer to Appendix A.

II. Awards

Autism Speaks will make a limited number of treatment research grants determined by the available financial resources.

<u>Type</u>	<u>Duration</u>	<u>Funding</u>
Full-level research grant	1-3 years	\$150,000/year maximum
Pilot-level research grant	1-2 years	\$60,000/year maximum

An amount not to exceed 10% (inclusive) of direct costs may be used for Sponsoring Institution's indirect (overhead) costs. The total award including indirect costs cannot exceed the annual maximum award allowed.

Pilot-Level Treatment Awards *must satisfy one or more of the following requirements:*

- Employ innovative, novel and/or untested research in biomedical or behavioral treatment approaches, which if successful, will advance emerging or transforming areas of research on the prevention, treatment, or cure of autism spectrum disorders
- Develop preliminary data necessary to expand to the level of a trial, develop a research program and/or submit a competitive treatment research grant application to a major funding agency (e.g., NIH, NSF, CDC etc.) or the equivalent
- Come from beginning principal investigators with demonstrated potential for and a commitment to autism research
- Come from established investigators with expertise and experience in other (non-autism) areas of research that are relevant and will be applied directly to research on autism spectrum disorders

Full-Level Treatment Awards *must satisfy the following requirements:*

- Build on existing and/or pilot-level feasibility data to further investigate biomedical or behavioral treatment approaches that, if successful, will advance emerging or transforming areas of research on the prevention, treatment, or cure of autism spectrum disorders
- Have shown promise in previous research or that are supported by a body of existing research evidence.
- Come from established principal investigators with demonstrated potential for and a commitment to autism research

III. Eligibility

Investigators holding full-time faculty appointments, professional affiliations or equivalent at accredited academic, medical, research or educational institutions are eligible to apply. Applications will NOT be accepted from individuals or proprietary organizations to support the research and development of products or treatments for profit.

As Principal Investigator or Co-Investigator, all applicants are restricted to one submission per Treatment review cycle, regardless of whether it is at the Full or Pilot Level. *Multiple submissions will be returned.*

IV. Submission Requirements

Autism Speaks utilizes a web-based application system for their grant submissions. All applications must be submitted through this system. It is imperative to indicate whether the submission is for the Full- or Pilot-Level Treatment research option.

Please Note:

1. The Principal Investigator must be the applicant. Go to <http://science.grants.autismspeaks.org> and register with your **institutional** email address (or log in if you have an ID). We recommend using the following browsers: Chrome, Firefox or IE 8 or higher. Complete your profile information.
2. It is advisable to review the LOI page and then the Application page in the grant system well in advance of any submission date.
3. Uploaded documents should be 11 point Arial font with 1-inch margins all around. Please do not have headers or footers in submitted documents. *Applications exceeding the specified document limits will not be reviewed.*
4. Preferred file type is PDF.
5. Applications received after the deadline will not be accepted unless permission has been previously granted by the Autism Speaks Grants Office and then only due to rare and unavoidable circumstance. There are no exceptions to this rule. All decisions of Autism Speaks in regard to late submissions will be final.
6. It is the applicant's responsibility to contact their Office of Sponsored Projects (or the equivalent) to identify the Responsible Official (RO) for this application. The Responsible Official will review and submit the final portion of the application. Their submission is their approval of the application on behalf of the institution. LOI forms can be completed and submitted by the applicant. Full applications can only be submitted by the RO. The RO's name and contact information will be a part of the LOI page.

V. Resubmission

Applications that were previously denied by Autism Speaks must meet the following requirements in order to be considered for review:

1. The resubmitted application should reflect a careful review of the previous Autism Speaks reviewer comments and incorporate changes based on the critiques. Keep in mind that the resubmission must stand as a newly integrated whole.
2. The Letter of Intent must include a summary of any substantial additions, subtractions or changes made to the original application. In addition the Letter of Intent should also include a response to the issues raised in the reviewer comments.
3. The full application should clearly identify substantial scientific changes in the text using brackets, indents, or a distinguishable font. Do not underline or shade the changes. Describe any sections that are deleted. If the deletions are significant, explain that in the introduction. The application should describe additional work completed since the original submission.

4. Only one resubmission will be considered per application. Any applications submitted more than two times will not be considered for review.

VI. Completing the Letter of Intent (LOI)

Log in and click “Applications” at the top of the profile page or “Go to Applications” at the bottom of the page. Choose “Start a new LOI or application” then “Treatment 2012”. The LOI includes two web pages, the Basic Information Page and the LOI Form. The requirements for each page are as follows:

1. Basic Information Page includes:
 - a. **Title:** Enter less than 100 characters, spaces included
 - b. **Brain Tissue Sources:** complete as applicable to the research project.
 - c. **Scientific Abstract:** (up to 2500 characters, spaces included) that describes the project goal(s) and/or hypothesis, specific aims, research methods, expected results and significance/relevance to Autism Speaks’ targeted research areas as stated above.
 - d. **Layperson Abstract:** (up to 2500 characters, spaces included) that must be easily intelligible to a knowledgeable, but non-expert, person.
 - e. **Co-Investigators and collaborators** (tip: start by entering the last name).). It is important to enter all individuals participating in the research project. Final changes to this field will be made during completion of the application.
 - f. **Responsible Official:** Choose the Responsible Official from the PI’s institution. You must have an institutional email to add a new person.
 - g. **Keywords:** Carefully select all the relevant keywords associated with the research project. This information is used to select expert reviewers who are knowledgeable about your particular field of study.
 - h. **Note: All this information will be available for review and editing at the application stage.**
2. Letter of Intent Form includes:
 - a. **Autism Speaks’ targeted research priority:** Select the priority which the project is addressing. –
 - b. **Priority Explanation:** Explain how the primary priority will be addressed by the research project. (up to 3000 characters, spaces included).
 - c. **Application type:** Indicate if you are applying for a pilot- or full-level grant.
 - d. **Principal Investigator Biosketch:** NIH format not to exceed 4 pages
 - e. **Letter of Intent Narrative:** Refer to guidelines immediately following this section.
 - f. **Letter of Eligibility:** A letter, one page maximum, from the institution’s Office of Sponsored Projects (or its equivalent) or the Head of the PI’s Department/School/Division, confirming the PIs eligibility. Please refer to section III above.
 - g. **Resubmission:** If the LOI is a resubmission of a previously denied application indicate this is so and include the previous project identification number.

Letter of Intent Narrative Guidelines:

The LOI Narrative cannot exceed 2 pages, and must include the following information:

- A concise description of the proposed project including: type of Treatment project, specific aims, methods and expected results
- A clear justification for the relevance and potential significance of the project to the targeted priority research areas described above
- Any references must be included in the 2 pages.

- The LOI should be specific enough to be screened for scientific merit, fidelity to the purpose of the specific RFA, and relevance to Autism Speaks' priority research areas.

IMPORTANT NOTE: LOIs will be subject to in-depth review. After all LOIs are reviewed, Autism Speaks will send an email indicating approval or disapproval. *Please do not contact the grants staff regarding LOI acceptability.* Applicants with approved LOIs will be permitted to submit a full application. All decisions are final.

VII. Completing Your Application

If you are notified that your LOI has been approved, you will be able to begin your application. Log in and select your application.

1. **Basic Information Page:** Review and edit your entries from the LOI.
2. **Autism Speaks' targeted research priority:** identify which priority is addressed by this application and explain how it is addressed (3500 characters for explanation, spaces included)
3. **Research Plan:** (10 pages maximum) the research plan should address the evaluation criteria in section IX below. **
 - a. **Impact** in terms of potential to improve the lives of persons struggling with Autism Spectrum Disorders **
 - b. **Relevance** to Autism Speaks' targeted priority research areas
 - c. **Innovation** – describe how the project is novel, ground-breaking, and has the potential to move the field in new directions
 - d. **Research Strategy**, including specific aims, participant exclusion/inclusion criteria, recruitment strategy, methods and procedures, and statistical analyses to address specific aims
 - e. **Investigators' Qualifications** –briefly describe (Biosketches must be provided – see J below)
 - f. **Environment** – briefly describe (greater detail should be included in H described below)

**** IMPORTANT NOTE: Impact will also be measured long-term via Autism Speaks' future surveys on the impact and outcome of the grant (e.g., publications, leveraged grant funding) for at least 3 years after completion of the project. A clear willingness and commitment to respond to all outcomes requests is required for awardees.**

4. **Figures:** you may include a maximum of two pages of relevant images, figures and graphics. Images uploaded here will not be counted towards the 10-page limit.
5. **Bibliography:** include complete literature citations including titles and all authors.
6. **Treatment Budget Form:** download and complete the template. The budget may include:
 - a. Personnel Costs (not to exceed the percent effort committed to the proposed project)
 - i. Principal Investigator and/or Co-Investigator salaries and benefits
 - ii. Technical research assistant salary and benefits
 - iii. Research Assistant or fellow stipends and benefits are allowed (**NOTE: Tuition reimbursement is not allowed**).
 - b. Research supplies, services and related expenses

- c. Essential equipment as shown in the table. A vendor estimate is required for a single item of equipment costing more than \$5000.

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Pilot-level research grant	1-2 years	\$60,000/year maximum

- d. Consultants
 - e. Travel to professional meetings
 - f. Publication and data analysis costs
 - g. Indirect costs: An amount not to exceed 10% of direct costs may be included for the Sponsoring Institution’s indirect (overhead) costs. The total grant cannot exceed \$150,000 per year (Full-Scale Research Grant) or \$60,000 (Pilot Research Grant).
 - h. Collaborations: If you are collaborating with a second site, put their total amount in “Subcontract” and upload their line-item budget under “Budget Subcontract.” Total indirect costs for both sites cannot exceed the maximum allowed.
7. **Budget Justification** (4 pages max) the budget justification should provide an explanation for all lines in the budget for all years.
8. **Human Participants and/or Vertebrate Animals:** Applications that use human participants or vertebrate animals must address issues of protections. If no ethics approval is needed for the proposed research, please upload a memo to that effect. Note that ethical approvals from the applicant organization are required before an award will be made. These approvals do not serve in lieu of the information requested below.
- a. HUMAN PARTICIPANTS (defined as living individuals)
 - i. Scientifically justify the involvement of human participants in the proposed research.
 - ii. Describe in detail the plan for the involvement of human participants in the proposed research
 - iii. Describe in details the potential risks to participants and measures to be taken to protect participants from those research risks.
 - iv. For clinical trials, describe plans for data and safety monitoring, including the description of a data and safety monitoring board if necessary.
 - b. VERTEBRATE ANIMALS
 - i. Describe in detail the proposed use of the animals, including species, strains, ages, sex and number to be used
 - ii. Justify the use of animals, choice of species and numbers to be used
 - iii. Provide information on the veterinary care of the animals
 - iv. Describe procedures for ensuring discomfort, distress, pain and injury is minimized. Please include the method of euthanasia and the reasons for its selection.
9. **Resources and research environment:** (1 page max) describe the resources and environment that will support the successful completion of the project. If the project will be utilizing existing samples and/or collecting samples, it should be specified how and when they will be used and shared with the autism community following the end of the project.

10. **Letters of Collaboration:** if needed in support of the research project. Combine multiple letters into one file for upload (2 MB maximum).
11. **Biographical Sketches:** for the Principal Investigator, named Co-Investigators and collaborators in NIH format (4 pages max each). Indicate education, complete citations (including title) of publications relevant to the proposed research, and briefly describe currently funded research projects (especially clinical and research experience with pharmacological or other treatment in mental health disorders). Combine multiple biosketches of co-investigators and collaborators into one file for upload (2 MB maximum).
12. **Current and pending grant support:** indicate funding source, total award amount, award duration (inclusive dates) and project title for all investigators and significant collaborators. Financial and substantive overlap will be examined after review.
13. **Resubmission:** If the LOI is a resubmission of a previously denied application indicate this is so and include the previous project identification number.
14. **Supporting files:** other documents that are relevant to the application must be referenced in the research plan and may be uploaded to "Additional Materials." Multiple documents should be combined into one file for upload (3 MB maximum).
15. **Peer reviewed research publications:** a maximum of 2 (including manuscripts accepted for publication) will be accepted; however, manuscripts not yet accepted for review, review articles, book chapters, popular press articles and meeting abstracts will NOT be accepted. Publication files MUST NOT be locked or protected in any way.

NOTE: Supporting files, publications and updates (see VIII) are provided as a courtesy to the reviewers who are not obligated to refer to them in evaluating an application.

VIII. Endorsing & Submitting the Application

Applications must be submitted electronically using the Autism Speaks Grant Administration System. Applications that are late, incomplete, exceed the document limitations, or do not adhere to the required format will not be reviewed. Applications that are faxed or emailed will also not be reviewed.

When an LOI is approved, the Responsible Official named in the LOI will be contacted by Autism Speaks' grants staff with system access information. When the application is complete, it is the responsibility of the applicant to contact their Responsible Official who must complete the submission. The Responsible Official's submission of the application signifies their endorsement on behalf of the institution.

Autism Speaks reserves the right to return without review any fellowship application that in its judgment is not in compliance with its rules and procedures for application preparation and submission, is not responsive to its research training goals, or exceeds its funding limits or available resources. It is the responsibility of the applicant to ensure that the application is complete and conforms to the guidelines.

IX. Review Process and Evaluation Criteria

Autism Speaks is committed to efficient, fair and expert review and funding of meritorious applications that are relevant to the mission of Autism Speaks Review of scientific merit is provided by a group of highly accomplished researchers from the Autism Speaks Scientific

Advisory Board with additional expertise, as needed, from other researchers in the specific research areas of the applications.

Applications are evaluated using the following criteria.

***** Pilot-Level Treatment grants may be more limited in scope will not be expected to have definitive preliminary data **.***

Impact and Relevance

Will the proposed research and expected results contribute new knowledge or methods to advance the goal(s) of discovering the causes, diagnosis, treatment and/or cure of autism spectrum disorders? Specifically, does the application directly address the Autism Speaks' targeted research areas as described above. To what extent does testing the proposed hypothesis, undertaking the proposed endeavor, or solving the proposed problem have the potential to move the field forward?

Innovation

Does the application develop innovative and creative ideas or methods of research, diagnosis or treatment? Does the project propose to develop or employ novel concepts, approaches or methodologies, tools, or technologies for this area? Does the application challenge an existing paradigm or practice? Will the project application propose ideas or methods that have not been previously utilized in autism research or have not been applied in the way that is proposed?

Research Strategy

Is the project proposed well designed? ***For Full-Level Treatment research grants, is there preliminary data available to establish feasibility and support the likelihood of further success? ** Although preliminary data are not required for Pilot-Level research grants, any data submitted may be critiqued. ***** Are the key components of the sample, methods, and data analytic approaches well described and reasonable? Does the application present well reasoned, realistic, and appropriate to the strategy, milestones, and timeline of the proposed project? Are potential problem areas acknowledged, alternative tactics considered, and benchmarks for success presented? Will the required methods and analyses will be available and implemented appropriately, and are they feasible for this research team relative to the scope of the proposed project?

Investigators' Qualifications

Do the investigators have the appropriate training and expertise to conduct the proposed research? Have they demonstrated satisfactory productivity, relative to stage of career, in terms of peer-reviewed publications and other benchmarks in the area of the proposed research? Have the necessary collaborations been established and documented with letters of agreement?

Environment

Do the performance sites where the work will be done contribute to the probability of success? Is the scientific environment conducive to the work proposed, in terms of institutional support, physical resources, and clinical and intellectual resources? Will the proposed studies benefit from unique features of the scientific environment, subject populations, or collaborative arrangements? Has access to necessary special research equipment, data bases, and/or facilities been appropriately documented with letters of agreement? Does the application document access to the appropriate clinical/animal/laboratory resources needed to conduct the proposed study?

X. Miscellaneous

Human Subjects Certifications must be documented with a copy of an official letter of approval (or equivalent for non-US applicants), which identifies the Principal Investigator, project title and date of approval, and is signed by the Review Committee Chair or equivalent responsible institutional/government official. Prior certification for another project cannot be substituted, but can be officially amended to include the proposed project (identified by project title).

IMPORTANT: IRB (or equivalent ethical) certification is NOT required to submit an application; however, IRB (or equivalent ethical) certification must be submitted as soon as possible following official notification of an award. Autism Speaks will NOT issue the first funding increment of a grant until this certification is received.

Applications using post mortem tissue must provide documentation that the necessary tissue is or will be available at the research site at the time of the award. Applications without proper documentation will be returned without review. Investigators desiring to obtain tissue from the Autism Tissue Program should go to atportal.org for information, application instructions and due dates. Applications for tissue from Autism Speaks' Autism Tissue Program will be processed through the Autism Speaks web-based application system here, <http://science.grants.autismspeaks.org>.

The first payment will be contingent upon receipt of the countersigned grant agreement letter and certification of ethics approval, if applicable. Subsequent payments on multiyear grants will be paid annually and will be contingent upon receipt and approval of interim progress and financial reporting. Interim reports are due 10 months after the start of the grant.

Funded researchers also are required to submit or have submitted for them to the National Institutes of Health's PubMed Central database an electronic version of their final, peer-reviewed manuscripts upon acceptance for publication, to be made publicly available no later than 12 months after the official date of publication. This requirement applies to all grants awarded after December 3, 2008, whether Autism Speaks funds the research in whole or in part.

Autism Speaks reserves the right to make information about funded grants publicly available. Funded research projects may be subject to data and resource sharing requirements.

XI. Contacts:

Grants Administration/Online Application/Budget Questions:

Joan New, MBA, Grants Associate Manager: 609-228-7313; jnew@autismspeaks.org

Application Development:

Anita Miller Sostek, Ph.D., Vice President, Scientific Review & Operations: 202-955-3314 or 202-384-5882; anita.sostek@autismspeaks.org

Michael Rosanoff, MPH, Associate Director, Public Health Research & Scientific Review: 917-475-5067; mrosanoff@autismspeaks.org

Appendix A

Autism Speaks 2012 Research Emphasis Areas

Autism Speaks supports global biomedical research into the diagnosis, causes, prevention, and treatment of autism or its disabling symptoms. Our mission is to improve the future for all who struggle with autism spectrum disorders. In support of that mission we provide funding along the entire research continuum -- from discovery to development to dissemination -- for innovative projects that hold considerable promise for significantly improving the lives of persons with autism.

Autism Speaks research funding involving treatment research will be directed toward projects that hold the potential for improving the quality of life through ***more effective medicines, behavioral interventions, and technologies***

Examples of types of projects that would be relevant include, but are not limited to, the following:

- Investigations into epigenetic mechanisms of gene expression that may serve as moderators or mediators of treatment response.
- Investigations into environmental influences factors that can serve as moderators or mediators of treatment response.
- Identification of biomarkers that can serve as moderators or mediators of treatment response.
- Investigations into biological, psychological, behavioral and family-based interventions that may mitigate the expression of symptoms that are associated with disability in young children with ASD
- Development and testing of novel interventions, supports, and treatment methods for adults with ASD
- Elucidation of moderators and mediators of treatment response in adults with ASD
- Innovative treatments for common medical conditions and co-morbidities associated with ASD in adulthood
- Development of measures to more efficiently identify common comorbid medical and psychiatric conditions that can contribute to the distress experienced by nonverbal persons with ASD
- Development of innovative methods or devices that can assist in minimizing pain and distress experienced by nonverbal persons with ASD when undergoing medical procedures (e.g. phlebotomy, neuroimaging)
- Development of biological, behavioral, occupational and family-based treatments that are uniquely appropriate and effective for nonverbal individuals with ASD
- Development and testing of novel treatments aimed at preventing or modifying core symptoms of autism, or associated medical conditions throughout the lifespan
- Development and testing of novel treatments of medical conditions associated with autism, including but not limited to sleep disorders, GI conditions, seizures, metabolic conditions, and psychiatric co-morbidities

- Randomized clinical trials (RCTs) that include biomarkers of therapeutic efficacy or for tailoring therapy
- RCTs that include biological or surrogate endpoints (e.g., electrophysiological, structural)
- RCTs that combine pharmacological and behavioral interventions to improve efficacy for improving core or associated symptoms of ASD
- Development and validation of sensitive and specific outcome measures that assess change in the core features of autism and that can be used in clinical trials
- Novel technologies that provide for the efficient assessment of biomarkers and physiological indices of treatment response in clinical trials
- Novel technologies that can be used to efficiently track treatment-related changes in target symptoms across a variety of naturalistic settings
- Novel technologies that can accelerate the efficacy of other treatment modalities that impact biological, psychological, educational, occupational and/or social functioning
- Novel technologies that can improve the educational, occupational and social success of individuals with ASD