

## Responding to Delaware INBRE RFA Templates & Exemplars



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&

Research Development Committee

Hakeem Lawal, DSU

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&

Melinda Duncan, INBRE PI

RFA Website:

<https://de-inbre.org/de-inbre-drpp-request-for-applications/>

### 1. Research Projects

80K/year for 2 years (\$160K total), 50% research/professional effort confirmed by chair.

### 2. Pilot Projects

40K/year for 1 year, 25% research/professional effort confirmed by chair.

For both, mentor required, if a new/early stage investigator.

### Application Timeline

- Letter of Intent (LOI) due: **September 23, 2024**
- Full Proposal due: **October 21, 2024**
- Just in Time: **March 03, 2025**
- All submissions via the Piestar RFX system: <https://de-inbre.piestar-rfx.com/rfps>

### Formatting Requirements

~11 point or larger Arial, Helvetica, Georgia, or Palatino Linotype fonts (non-condensed), single (or higher) paragraph spacing, and ½ inch margins. Similar to those of NIH R type, small grant proposals.

- Project title:

“Effects of Nintendo exergaming on the motor and cognitive skills of autistic children.”

- PI name, contact, & affiliation:

- Mentor and Key personnel names, contacts, & affiliations:

- Project type:

- RP (\$160K)

- [PP (\$40K), subtype: take-off, booster, high-end equipment, data science]

- PI Eligibility Q: Are you PI eligible at your institution, New PI or ESI or Senior PI


- 3-5 Reviewer Names, Affiliation, Contact Info (Email), Confirm no COI

- Project Description / Abstract (to help identify reviewers)
  - Define the problem, study aim, methods (system studied, methodology used), expected results, and impact:
    - “Autism is a highly prevalent neurodevelopmental disorder. ADD MORE DETAILS. While 90% children with ASD have motor difficulties, only 30% receive movement interventions to address their multisystem challenges in motor/cognitive skills. ADD MORE DETAILS. In our pilot study, we found positive effects of exergaming on the cognitive and motor skills of autistic children after an 8-week intervention. However, our study was conducted in a controlled lab environment, and we do not know if these results would extend to a home/community environment. **Aim:** In this project, we will explore the effects of Nintendo exergaming (NE) in a larger community sample of autistic children wherein services are offered by less skilled providers to examine its efficacy, feasibility, and acceptability in a community setting. **Methods:** 50 children with ASD will be matched and randomly assigned to the NE or control groups to complete a motor and cognitive battery of tests before and after an 8-week NE intervention. **Exp Results:** We expect the intervention group to improve their cognitive and motor skills compared to their own baseline performance as well as, compared to the control group.”
  - Impact/NIH Relevance Statement:
    - Mention the basic &/or clinical impact on your field, if aims are achieved.
- “If aims are achieved, we will offer the research evidence to support the efficacy, feasibility, and acceptability of implementing the NE intervention in the community for positively impacting the motor/cognitive development of autistic children. Clinicians may consider using NE as an adjunct therapy tool within their practice through support from less skilled providers.”

All of this can be pasted under Project Description.

# Delaware INBRE Full Proposal Checklist

Delaware's Biomedical Research Catalyst • de-inbre.org



Ask for help: Research contact/mentor/me


- *SF424 Form* (research contact)
- Biosketches (<5 pages)
- *Specific Aims* (1 page) (sample NIH grants link in RFA, ask mentor/me)
- *Research Strategy* (6 pages) (sample NIH grants link in RFA, ask mentor/me)
- Bibliography (no limit)
- *Budget & Justification* (research contact)
- UG Inclusion Plan
- *Chair's Letter of Support* (chair)
- IDP
- *Mentoring Plan Letter* (mentor)
- Other files (support letters, vert. animals, clinical trial forms /human subjects sections)
- Prior award success statement

### Required Forms

- **NIH SF424 form:** Project title, Study location, PI details, **administrator signature**
- **Biosketches (PI, mentor)** (see template, sample, and NIH bio FAQs)
  - **Personal Statement**
  - Your expertise, training, experience with conducting research/leading projects (past publications, other grants), and any special circumstances.
  - **Contributions to science**
  - A scientist with one publication may want to summarize the key finding of the paper and its importance in a short contribution. Scientists with no publications may wish to provide a contribution describing their efforts on other projects.
  - **Can cite preprints. Follow policy (Chron. order, no hyperlinks, etc.)**
  - **Create a MyBibliography link through pubmed. Use Sciencv.**
  - <https://www.ncbi.nlm.nih.gov/sites/myncbi/1luWer7h6lVAg/bibliography/42448338/public/?sort=date&direction=ascending>

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- Bibliography (no limit)
- Budget & Justification (*research contact*)
- UG Inclusion Plan
- Chair's Letter of Support (*chair*)
- IDP
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- 1-page document
- Importance of your topic to the field
- Introduce more details on the biology/physiology, the problem in your field that you intend to solve.
- Prior work/preliminary study that leads to the proposed question.
- State the aims and hypotheses (1-2 for PP or 2-3 for RP) (identify, determine, compare)
- End with basic/clinical impact on the field
- Ask mentor or me, for a sample grant. Please do not distribute.

### Specific Aims

Parkinson's disease (PD), the second most common neurodegenerative disease. Yet despite its public health relevance, PD has no known cure and the cause of a vast majority of cases are unknown. L-DOPA treatment, the most common treatment for the disease causes serious side effects and may be of limited efficacy. We are interested in developing novel and effective treatments for PD, and our strategy is to identify disease modifying therapeutics. We and others have shown (using *Drosophila* and rodent models respectively) that the pesticide rotenone is a useful laboratory model for PD recapitulating key pathological hallmarks of the disease. And in a previous drug screen for compounds that trigger neuronal amine release, we identified the small molecule dacarbazine (among other compounds) as potential anti-PD agents. We have also shown that dacarbazine confers organismal protection against rotenone-induced lethality in *Drosophila*. We are now testing whether this compound (and as needed, other hits from our screen) can similarly prevent neuronal death and mitochondrial dysfunction. We will use the fruit fly, a well-established genetic model to perform these studies. **We hypothesize that dacarbazine will protect both mitochondria and dopaminergic neurons against damage caused by toxin and genetic risk factors for PD.** Here, we propose a pilot study to test the potential neuroprotective properties of dacarbazine against both rotenone and alpha synuclein overexpression models of Parkinson's disease. **Importantly, we will also test gene-environment interactions relevant to PD by measuring the toxicity of a combination of rotenone and alpha-synuclein and the efficacy of dacarbazine against that combined exposure.** We will test our hypothesis by performing both neuronal toxicity and mitochondrial function assays as described below.

**Aim 1: Determine the neuroprotective capacity of dacarbazine in *Drosophila* models of sporadic and familial PD.** Our preliminary data indicate that treatment with dacarbazine, one of seven potential anti-PD




- **Significance**
  - Provide details on basic biology, importance, research gaps, and new findings.
  - Prior literature and preliminary studies that provide the scientific rationale for pursuing the project.
  - Emphasize the strengths and weaknesses in the rigor and transparency of the past / proposed studies.
- **Figure 1: Link theory~aims~methods~outcomes**
- **Innovation** (bulleted list)
  - How is your project new and unique, e.g., explores new scientific avenues, has a novel hypothesis, or will create new knowledge in the area of xx.
  - Explain how your work can refine, improve, or propose a new application of an existing concept or method.
  - Review different grant samples. Please do not distribute / post grants online.
  - Become a grant reviewer.

- **Approach** (Prelim & Proposed)
  - Show how you plan to do the project and show that you can do it?
  - Address study design. Describe experiments. Variables, data/statistical analyses (may include power analysis).
  - **Graphs/flowcharts** to explain findings, study procedures, steps of your protocol.
  - Alternative strategies & potential limitations.
- **Team/environment** – explain how this team is capable of executing the project
- **End proposal** with few lines on the significance of the work
- **Bibliography**

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- ~~*Bibliography* (no limit)~~

## Other Files

- *Budget & Justification* (research contact)
- *UG Inclusion Plan*
- *Chair's Letter of Support* (chair)
- *IDP*
- *Mentoring Plan Letter* (mentor)

More files (support letters, vert. animals, clinical trial forms /human subjects sections, prior award success statement)

- Identify effort for personnel (PI, students, etc.)
- Supplies/equipment
- Travel (domestic/conference)
- Other expenses
- E.g., Participation payment
- Technology < \$5000 goes under other expenses
- See justification sample for the level of detail needed.
- Work with research contact and mentor. They will help confirm allowable expenses.
- Ask Dawn if concerned about what is allowed in a budget.

### **DOMESTIC TRAVEL**

Domestic travel is requested for the *[insert travelers- Ex: PI and Graduate Students]* to attend conference such as *[conference name]* in *[Insert location if known]* for *[#]* persons. Costs include registration (\$X.XX), airfare (\$X.XX), ground transportation (\$X.XX), lodging (\$X.XX per night for *[#]* nights), and meals (\$X.XX for *[#]* days) per person. Attendance at this conference will benefit the project by *[insert project specific information]*.

Funds are also requested to cover mileage to travel to *[insert location]* for *[insert reason- Ex: field work, collaboration]* and is calculated as follows: From *[list first location]* to *[list second location]*, *[#]* miles one way @ \$[enter federal mileage rate] per mile X *[#]* days X 2 (round trip) = \$X.XX.

- **UG Inclusion Plan** (see sample)
- State how you include undergrads in your research in active/ supporting roles. How they have been involved and will be involved. If they cannot be involved, explain why?
- **Chair's Letter of Support** (see template): Confirms the 25% or 50% effort on the project.
- **IDP** (see sample): Link SMART goals to activities you plan to do in the next 1-2 years (follow the IDP template). Can use your own format.
- **Mentoring Plan Letter** (see sample): Describe the mentor's record, PI's potential, mentor's understanding of the PI's IDP goals, and plans for guiding them to achieve these goals through meetings and discussions. Explain roles of different mentors on a mentoring team.

### Forms based on application type

- **Letters of support:**
  - For the high-end core facility award, core director's letter of support must indicate how they will support the PI to complete project aims by using their facility.
- **Vertebrate animal use** section (Look in RFA under additional specific details (ask mentor))
- **NIH clinical trial form** – includes Humans Subjects section (ask me for help)
- **Prior IDeA award success statement** (sample provided)
  - Describe how past awards have resulted in presentations, publications, and plans for/actual grant submissions. What has been the project's contribution to science and how it enabled you to ask further research questions.



## Any Questions!

### Mentoring Contacts

UD:

Anjana Bhat, [abhat@udel.edu](mailto:abhat@udel.edu)

DSU:

Hakeem Lawal, Hacene Boukari, Melissa Harrington

Nemours:

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### DRPP DE-INBRE Program Contacts

- DRPP director, Anjana Bhat, [abhat@udel.edu](mailto:abhat@udel.edu)
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- Piestar contact: Linda Polasko, [lpolasko@udel.edu](mailto:lpolasko@udel.edu)
- Program Coordinator, Laura Lessard, [llessard@udel.edu](mailto:llessard@udel.edu)
- INBRE PI, Melinda Duncan, [duncanm@udel.edu](mailto:duncanm@udel.edu)
- DE-INBRE office, [info@de-inbre.org](mailto:info@de-inbre.org)

### Institutional Research Contacts

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