Call for Proposals

Undergraduate Research and Innovation (URI) and TechQuest Innovation/Prototype Awards Spring 2017

URI Phase-2 Student Seed Grants ($3,000 Each Project): Track-1 ONLY: Technology/Product Development and Innovation

and

TechQuest Innovation/Prototype Awards Competition (Up to $18,000 in Prizes and Summer Stipends)

All proposals submitted for URI Phase-2 Student Seed Grants: Track-1: Technology/Product Development and Innovation will be automatically considered for TechQuest Innovation/Prototype Awards. The formats (Appendix A) for the Phase-2 Track-1 seed grant proposal (both with and without Phase 1 participation) will include the TechQuest format plus additional topics for the Phase-2 Seed Grant proposal.

If you are not submitting a URI Phase-2 seed grant proposal, you may submit a proposal for TechQuest Innovation/Prototype Award only. Please check the appropriate box on the cover sheet: “TechQuest Innovation/Prototype Awards Only”.

URI Phase-2: Track-1 or TechQuest Proposal Submission Deadline:

February 21, 2017

Oral presentation by 8-12 finalists: March 21, 2017

Information Session on Proposal Writing and Submission

Hosted by URI External Advisory Board Members (over Pizza lunch):
February 14, 2017; 12:00 PM to 1:30 PM; Room 240, Campus Center

1. Eligibility

URI Phase-2: Track-1: Technology/Product Development and Innovation

URI Phase-2 Student Seed Grants provide up to $3,000 per project to pursue research further or develop a complete prototype. Funds can only be used to order project supplies and prototyping through the Office of Undergraduate Research and Innovation. Phase-2 proposals may be submitted by former Phase-1 Student Seed Grant winners who have completed Phase-1 work. Phase-2 proposals may also be submitted by students who have a research or product idea that has shown the preliminary proof of concept, market assessment or application-based research to establish the need, significance and basic approach. Both Phase-1 winners and nonparticipants may prepare Phase-2 proposals using the URI Student Seed Phase-2 Grant and TechQuest Proposal Application... which is posted on the URI website http://centers.njit.edu/uri/programs/index.php.

Note: Seniors are only eligible if they are a rising senior at the time of the application or have at least two full semesters to work on the project. Students are required to present the progress report and the final presentation to the board in the following semester(s).

TechQuest Innovation Award Competition:

This competition is to promote and reward innovation among NJIT undergraduates. TechQuest fosters innovation as a bridge between an inventive idea and commercialization of that idea. Participants in TechQuest must be in good academic standing and be enrolled full-time during the fall and spring semester of their year of entry. Students may form teams consisting of undergraduates from any NJIT department. Teams may have as an advisor an NJIT faculty member or other person associated with NJIT. URI seed projects, NSF-sponsored projects, Capstone and other research projects by NJIT undergraduates may be entered in the competition. Projects entered in TechQuest may build on prior projects, but the presenting team must identify its unique contribution to the presented work.

For 2017, new Prototype Award(s) (1st Time) will be given for the best prototype(s) representing the innovations and made by the presenting team(s). A prototype that has received a Prototype Award previously is not eligible.

A First Prize (1st Time) Innovation Award will be given for projects and for teams that have not won a TechQuest prize previously. There will also be First, Second and Third place Innovation Awards without restrictions (all entrants).

In the preliminary round of judging, eight to twelve finalists (including URI Phase-2 Student Seed Grant participants) will be selected from entrants based on a written report due on FEBRUARY 21, 2017. In the final round of judging, the finalists compete in an oral presentation on MARCH 21, 2017.

URI Phase-2 Student Seed Grants will be announced by MARCH 31, 2017. TechQuest winners will be announced on the Innovation Day, APRIL 10, 2017.
2. Qualifying Proposals

The entrants in the TechQuest competition are to demonstrate an invention, or novel combinations of known technologies, or a unique approach to a market or a combination of these categories. Eligibility for a US Patent provides useful criteria for inventiveness: a process, machine, manufacture, or composition of matter that is novel, non-obvious, and useful. A novel combination of known technologies may not be patentable because of prior art but may be the basis for successful commercialization and is eligible for the competition. Marketing a known technology to new customers or for new applications also qualifies since it may be the basis for a new business.

The innovative idea must originate within the team and/or team advisor as documented in the written report. Ideas which originate outside NJIT, e.g. a co-worker at a place of employment, are not eligible.

3. Requirements

Proposals for URI Phase-2 Track-1 Student Seed Grants and/or TechQuest Innovation/Prototype awards following the appropriate format at http://centers.njit.edu/uri/programs/index.php, should be submitted to techquest@njit.edu no later than midnight FEBRUARY 21, 2017.

All proposals submitted for Phase-2 Track-1 Student Seed Grants will automatically be considered for TechQuest Innovation Awards.

To inform entrants on patent opportunities and prior art issues, students are encouraged to attend a single session addressing intellectual property on FEBRUARY 16, 2017 at 2:00-3:00 at Campus Center 240 or to view the presentation online here. Sanjiv Chokshi, Esq., Assistant General Counsel for Patents and Intellectual Property at NJIT will conduct the session which addresses patent searching and requirements. He is available to answer questions on the invention disclosure process (Chokshi@njit.edu). General information concerning patents is available at http://www.uspto.gov/patents/resources/general_info_concerning_patents.pdf. Mr. Chokshi will receive all submitted proposals and be notified of the finalists. At his discretion, he may ask a team to submit an invention disclosure prior to judging the oral presentations.

Each student participant is encouraged to record the origin of ideas and safeguard data in a laboratory notebook or by other means. Records are essential to clarify the source of patentable ideas.

Questions on this combined competition, such as eligibility for 1st Time participation to TechQuest Innovation Awards, should be directed to Dr. Atam Dhawan Dhawan@njit.edu.

4. Awards

URI Phase-2: Track-1: Technology/Product Development and Innovation

URI Phase-2 Student Seed Grants provide up to $3,000 per project to pursue research further or develop a complete prototype. Awarding of the Phase-2 grants will be based on the Phase 2 only portion of the Evaluation Sheets (Appendix A). Funds can only be used to order project supplies and prototyping through the Office of Undergraduate Research and Innovation.

TechQuest Innovation/Prototype Awards:

The TechQuest awards for 2017 consist of three parts: (1) cash recognition Innovation Awards for the winning teams, (2) cash recognition Prototype Award(s) for the best prototype(s) built by presenting
team(s) and (3) two stipends of $3000 to be used by winning team members to continue work during the summer at NJIT on their projects.

The five TechQuest cash awards for 2017 are:

<table>
<thead>
<tr>
<th>Cash Recognition Awards</th>
<th>Innovation Awards</th>
<th>Prototype Awards (1st Time)</th>
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<tbody>
<tr>
<td></td>
<td>First Place (1st Time)</td>
<td>First Place (All Entrants)</td>
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<tr>
<td></td>
<td>$3000</td>
<td>$3000</td>
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</table>

The Prototype Award is open to all entries in TechQuest with the restriction that the prototype was created by the presenting team and the prototype has not received the Prototype Award previously. Teams may show prototypes but choose not to enter the prototype competition. The prototype may include commercial devices or software if they will be incorporated into the product. Judges may award the Prototype Prize(s) to more than one team and distribute the $3000 prize among winners at their discretion. The Prototype Award may be won by teams that have won Innovation Awards in the same or previous years.

Teams wishing to compete for the First Prize (1st Time) or Prototype Award(s) must enter “1st Time Participation” or “Prototype Award” on the title page of their written proposal or report.

Cash recognition awards are to be divided equally among team members. Team advisors are not eligible to share in the awards. Teams are encouraged to use prize money to further their projects.

TechQuest summer stipends will be provided to two winning team members who continue working on their projects in the NJIT Summer Innovation Accelerator Program (prepares students to launch businesses). The stipends for summer programs will be awarded, in order of preference, to the Prototype, First (1st Time), First, Second, and then Third place Innovation Award team members. Any remaining stipends will go to TechQuest participants who did not win awards. Other sources of funding are available to support summer work. Total summer support to an individual from TechQuest, university funds or grant/foundation funds is capped at $3,000.

All TechQuest awards are given at the discretion of the judges. Interpretation of the competition rules, including disqualification of individuals or teams, will be made by the judges. Decisions of the judges are final. Advisors to TechQuest teams may not serve as judges.

5. Judging Criteria

Eight to twelve individual or team projects will qualify as finalists on the basis of five-page or six-page written proposals for TechQuest plus additional topics for the Phase-2 Seed Grant proposals (no page limit). Proposal applications are at [http://centers.njit.edu/uri/programs/index.php](http://centers.njit.edu/uri/programs/index.php). These proposals will be treated as confidential. Phase-2: Track-1 Student Seed Grants and TechQuest award winners among the finalists will be decided at a closed oral presentation on March 21, 2017 at Campus Center Ballroom B. Ratings for the Innovation Awards will be weighted one-half on the proposal/report and one-half on the oral presentation. Ratings for the Prototype Awards will be weighted one-quarter on the written proposal/report and three-quarters on the demonstration at the oral presentation. In the rankings of the written reports for TechQuest to select the finalists, scores for teams competing for the Prototype Award will be scaled to 4/5 of their total score to account proportionally for additional
points (25%) available to them. Students entering the Prototype Award competition must also compete in the five TechQuest Innovation Award categories. (Appendix A).

Both written proposals and presentations may contain intellectual property and other confidential information that will not be disclosed publically to protect this information. Students are encouraged to provide sufficient technical detail so judges can assess the feasibility of their project. A requirement for judging is to maintain the confidentiality of the written report and the oral presentations.

Entrants in all competitions should base their written reports and oral presentations on the relevant sections of the Evaluation Sheets (Appendix A) used by the judges.

Written Proposal. The body of the written proposal for TechQuest will be no more than five pages or six pagers for Prototype Award entrants. The Phase-2 proposal has no page limit. Content exceeding page limitations may be disregarded by the judges. The report will be submitted in digital format, preferably as a PDF document. The report should contain references and may include links to material on the internet. Drawings, diagrams, and photos are encouraged to facilitate understanding.

The written proposal will have a cover page, not subject to the page count limitation, which will include the project title, and a listing of the name of each team member with contact information (email), and graduation year. The name of the NJIT advisor or course instructor and “1st Time Participation,” if eligible, or “Prototype Award,” if participating, should also be on the cover page. One team member should be designated as the contact person. Pages are to be numbered.

If you are not submitting a URI Phase-2 proposal, you may still submit a proposal for TechQuest Innovation/Prototype Awards only. In this case, please check the box for “TechQuest Innovation Awards Only” on the cover sheet.

Proposals for TechQuest and/or Phase-2 Seed Grants must be emailed to techquest@njit.edu no later than midnight, FEBRUARY 21, 2017.

Oral Presentation: Each individual or team finalist will make an oral presentation to the judges on MARCH 21, 2017. The oral presentation is closed to the public and may contain proprietary information. All members of the team are expected to attend the presentation and be available to answer questions. The presentations for TechQuest Innovation Awards will be a maximum of 6 minutes and will be followed with questions by the judges for up to 8 minutes. Phase-2 presentations will be allowed an additional 3 minutes for the oral presentation. The question period does not have a separate judging category; answers to questions will influence judging of the other categories.

The Phase-2: Track-1 Student Seed Grants Award winners will be selected based on ranking in the Phase-2 only portions of the written proposals (50% weighting) and the oral presentations (50% weighting). TechQuest Innovation Award winners will be selected based on ranking in the TechQuest only sections of the written proposals (50% weighting) and the oral presentations (50% weighting).

For Prototype Award entrants, the prototype device or software should be demonstrated as part of the oral presentation. A video may be used if indoor demonstration is not feasible. An additional 3 minutes for presentation and an additional 4 minutes for questions will be allowed for the prototype entrants. The Prototype Award winners will be ranked on the basis of the Prototype only score on the written (weighted 25%) and oral (weighted 75%) Evaluation Sheets.
**Poster Presentation:** Finalists are required and other entrants are encouraged to participate in the poster session on Innovation Day APRIL 10, 2017. The poster session is open to the public. If a team wishes to preserve patent rights to its project, the poster must not contain enabling disclosures of its invention. The team may contact Sanjiv Chokshi, Esq. with questions about intellectual property and what constitutes an enabling disclosure. Mr. Chokshi may contact the team on patent issues based on information in the written report.

**URI Phase-2: Track-1 Student Seed Grants and TechQuest Timeline**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>FEBRUARY 16, 2017</td>
<td>Intellectual Property Presentation 2:00-3:00 at Campus Center 240</td>
</tr>
<tr>
<td>FEBRUARY 21, 2017</td>
<td>Submit 5 or 6-page proposal/report to <a href="mailto:techquest@njit.edu">techquest@njit.edu</a></td>
</tr>
<tr>
<td>MARCH 10, 2017</td>
<td>Submit invention disclosure if requested by Sanjiv Chokshi, Esq.</td>
</tr>
<tr>
<td>MARCH 21, 2017</td>
<td>Oral presentation by 8-12 finalists</td>
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<tr>
<td>March 31, 2017</td>
<td>URI Phase-2: Track-1 Student Seed Grants winners announced</td>
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<tr>
<td>APRIL 10, 2017</td>
<td>Innovation Day Poster Session - TechQuest winners announced</td>
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**Appendix A**

**Evaluation Sheet: Written Proposal/Report**

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Judge</th>
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<tbody>
<tr>
<td></td>
<td>Highest</td>
</tr>
<tr>
<td>Score of 0 for no information in category.</td>
<td>5</td>
</tr>
<tr>
<td>1. Problem Statement and Significance: 10%</td>
<td>What problem are you trying to address? Why is the problem important (scope, need, urgency)? Do the goals represent a realistic approach to the problem?</td>
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<tr>
<td>2. Innovation, Creativity and Patentability: 20%</td>
<td>What is innovative, creative and insightful in your approach? How has your approach evolved over time? What existing patents may limit your freedom to practice or ability to seek a patent? If your project is a continuation of a previous project, what is your team’s unique contribution?</td>
</tr>
<tr>
<td>3. Accomplishments and Challenges: 20%</td>
<td>Describe the accomplishments of your team to date and the challenges you had to overcome. What challenges do you foresee in a successful conclusion of the project and how will you meet them?</td>
</tr>
<tr>
<td>4. Market Research for Potential Impact: 10%</td>
<td>Have you conducted surveys with potential users or done other market research? What is your target market and size? How is your product or service better than your competitors? What is the value proposition for your approach to this problem?</td>
</tr>
<tr>
<td>5. Bridge to Commercialization: 10%</td>
<td>What are the possible business strategies (including exit strategies) for your idea? How do costs for your strategy compare with alternatives?</td>
</tr>
<tr>
<td>6. Written Report: 30%</td>
<td>Evaluate the quality, organization and completeness of the report.</td>
</tr>
<tr>
<td>Prototype only (additional 25%)</td>
<td>How was the prototype made and financed? What were challenges in making the prototype and how did they influence the project?</td>
</tr>
<tr>
<td>Phase-2 only Goals (10%)</td>
<td>Are the Phase-2 goals aligned with the problem you are trying to solve and do they represent a logical extension of the prior goals? Are the Phase-2 goals clear and well-focused?</td>
</tr>
<tr>
<td>Phase-2 only Plan and Methods (30%)</td>
<td>Is the step-by-step plan to meet Phase-2 goals well thought out and realistic? Does it include alternative steps in case of difficulties? Are the methods proposed feasible and supportive of project goals?</td>
</tr>
<tr>
<td>Phase-2 only Deliverables (10%)</td>
<td>Are the deliverables aligned with project goals? Is the timetable properly sequenced and realistic? Does meeting the deliverables provide a basis for continued work or commercialization?</td>
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## Evaluation Sheet: Oral Presentation

<table>
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<tr>
<th>Project Title</th>
<th>Judge</th>
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<tr>
<th>Contact Author</th>
<th>Judge</th>
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<td></td>
<td>Highest</td>
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<td>5</td>
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</table>

Score of 0 for no information in category.

### 1. Problem Statement and Significance: 10%
- What problem are you trying to address?
- Why is the problem important (scope, need, urgency)? Do the goals represent a realistic approach to the problem?

### 2. Innovation, Creativity and Patentability: 20%
- What is innovative, creative and insightful in your approach? How has your approach evolved over time? What existing patents may limit your freedom to practice or ability to seek a patent?
- If your project is a continuation of a previous project, what is your team’s unique contribution?

### 3. Accomplishments and Challenges: 20%
- Describe the accomplishments of your team to date and the challenges you had to overcome. What challenges do you foresee in a successful conclusion of the project and how will you meet them?

### 4. Market Research for Potential Impact: 10%
- Have you conducted surveys with potential users or done other market research? What is your target market and size? How is your product or service better than your competitors? What is the value proposition for your approach to this problem?

### 5. Bridge to Commercialization: 10%
- What are the possible business strategies (including exit strategies) for your idea? How do costs for your strategy compare with alternatives?

### 6. Oral Presentation: 30%
- Evaluate the effectiveness and coherence of the oral presentation and the team’s commitment to the project.
- Prototype only (additional 25%) Is the prototype effective in demonstrating the innovation and for gaining acceptance by potential backers? Does the prototype show creativity and skill by the team members?
- Phase-2 only Goals (10%) Are the Phase-2 goals aligned with the problem you are trying to solve and do they represent a logical extension of the prior goals? Are the Phase-2 goals clear and well-focused?
- Phase-2 only Plan and Methods (30%) Is the step-by-step plan to meet Phase-2 goals well thought out and realistic? Does it include alternative steps in case of difficulties? Are the methods proposed feasible and supportive of project goals?
- Phase-2 only Deliverables (10%) Are the deliverables aligned with project goals? Is the timetable properly sequenced and realistic? Does meeting the deliverables provide a basis for continued work or commercialization?

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Judges’ comments to be given to authors.