Request for proposals for the 2018 IEEE Summer School on Nanotechnology

History: The IEEE Nanotechnology Council (http://sites.ieee.org/nanotech/about) sponsored its first Summer School Program on "Regenerative Nano-Medicine: From Advanced Delivery Systems to Electronic-Based Devices" at Tel-Aviv University, Israel, in June 2016. In its second year (2017), the Nanotechnology Council sponsored the following summer schools:

(a) "N3: Nanomaterials, Nanotools, and Nanodevices" at Montreal, Canada: The aim of this school was to provide graduate students and early career researchers in nanotechnology a basic understanding of the fundamental concepts that underpin the properties of nanomaterials, the opportunities afforded by advanced characterization tools and the prospects of nanoscale devices. Details of this Summer School can be found at the following website: http://ieeen3summerschoolmtl.org/. http://sites.ieee.org/nanotech/
and https://m.facebook.com/groups/550239578466583/

(b) "*Nanoelectronic technologies and devices: From basic principles to highly reliable applications*" at Toulouse, France: This school focused on high performance and low consumption systems based on nanoscale products, which operate under harsh environments and involve disruptive GaN (gallium nitride) & DSM (deep sub-micron) technologies. Details of this Summer School can be found at the following website: http://www.irt-saintexupery.com/ieee-summer-school/.

These schools have been highly successful in educating and training a multinational audience of students, post-docs, and other early career researchers in their chosen topical area. Through this current announcement, the Nanotechnology council seeks to continue this important initiative into its third year.

Call for proposals and its thematic areas: The IEEE Nanotechnology Council (NTC) is requesting proposals for its Third Summer School. The school is expected to maintain an educational focus on the fundamental theory and applications of any one of the thematic areas identified by the 2017 IEEE-NANO Conference, which is the flagship conference hosted by IEEE in the area of nanotechnology. This conference included the following technical areas in its call for papers: DNA nanotechnology, nanobiology and nanomedicine, nanoelectronics, nanomanufacturing, nanofabrication, nanonobotics and automation, nanomaterials, nano-optics, nano-optoelectronics, and nanophotonics, nanopackaging, nanoscale metrology and characterization, nanofluidics, nanomagnetics, nano/molecular heat transfer & energy conversion, nanoscale communication and networks, nano/molecular sensors, actuators, and systems, nanotechnology safety, and spintronics.

The IEEE Summer School on Nanotechnology may address the needs of a diverse target audience involving senior undergraduates, graduate students, post-docs, researchers and practitioners at the early stages of their careers, who are eager to broaden and/or deepen their skills in nanoscience and nanotechnology. Based on the success of the Summer School initiatives over the preceding years, it is expected that the attendance at the school will be around 50 participants.

The schools are expected to deliver highly differentiated programs in their chosen topical area with content delivered by global leaders and thinkers from academia, industry, and / or research laboratories. The schools may design a program that either: (i) introduces a broad field to a target audience that is new to the topic and has no prior background, or (ii) offer an in-depth training on a specialized topic such as nano-energy or graphene electronics to a target audience with some prior introduction to the chosen area. While proposals are encouraged to design programs in either aspect, the primary goal in both cases must be to educate, train and raise awareness among next generation researchers / academicians to technological advances, societal impacts, and career avenues in these rapidly evolving fields, and to foster participation in the adventure of research that will lead to the next generation of nanopioneers.

***Dates and Length*:** The third IEEE Summer School on Nanotechnology will be held in the summer of 2018. We expect the summer school to be offered every year thereafter, subject to continued availability of funding. The summer school is anticipated to involve a 5-day program, although slightly longer or shorter durations may be acceptable in certain cases.

***Summer School Format*:** A successful summer school will consist of a synergistic combination of tutorial-style lectures (2-3 hour duration), research seminars (40-60 minutes), panel discussions, and/or visits to local academic laboratories and industrial organizations. The lectures and content will be delivered by international scholars working in the areas of nanoscience and nanotechnology, and will focus on a central theme that lies within the topical areas covered during this year's IEEE-NANO conference. Inclusion of additional components such as an introduction to potential career paths and avenues for research funding, which are particularly beneficial for early career researchers / students and are relevant to the thematic area chosen by the school, is highly encouraged. The longer-format, tutorial-style lectures are also encouraged to be made available for video archiving at the TryNano.org website.

***Funding*:** The Administrative Committee of the IEEE Nanotechnology Council has approved $28K in total funding for the third summer school(s), with the maximum funding for a single proposal not to exceed $20K. This funding may be used for such expenses as travel contributions to participants and lecturers. Apart from the IEEE-NTC, the summer school is expected to be supported, in part, with funding from the local organizers. In addition, other sources of income such as participant registration (tuition) fees and / or industrial sponsorships may also be leveraged to meet the expenses involved with the organization of the summer school.

***Benefits to Participants*:** In addition to acquiring an organized view of an important area of nanotechnology, the summer school participants will be able to meet peer researchers and international scholars (especially young scientists) to discuss hot topics and on-going research, and will have opportunities to experience the local industry and culture.

Proposal Format, Review and Selection

The proposals are to be submitted in electronic format and are to be documented in 8.5x11-inch sized paper with single-spaced, 12-point, Times New Roman font. The proposal shall not exceed 12 single-sided pages in length, and is required to address the following aspects:

1. Goals, theme, and target audience.
2. Tentative list of lectures and lecturers. For each lecture, indicate the lecture type (i.e., a longer-format, tutorial-style or a shorter-format, seminar-style) and if lecturers have agreed to participate.
3. Tentative program and schedule.
4. Local organizer(s), including brief bios of the School director and its leadership.
5. Registration, accommodation, tuition and venue.
6. Budget and financial sponsor(s). Expected number of participants.
7. Letters of support (optional and not included in the page limit)

The IEEE Summer School Subcommittee will review received proposals based on the following criteria:

1. The quality of the proposed technical program and its ability to deliver the stated educational content to its target audience
2. The soundness of the budget
3. The length of the school
4. The desirability of the venue
5. The geographical balance of all funded summer schools (for future schools)

If a proposal is approved, the IEEE Nanotechnology Council will provide, upon request, a financial contribution to support the initiative. The co-funded amount depends on the available budget, the number of financed proposals and the soundness of the school budget, but will not exceed $20K for each individual award. The total anticipated funding for all selected school(s) is expected to be $28K. We recall that organizers can take advantage of other initiatives, e.g., the IEEE Nano Distinguished Lecture Program to further support the school (related regulations apply).

IEEE Summer School on Nanotechnology Subcommittee

The IEEE Summer School on Nanotechnology Subcommittee, a subcommittee under the Education Committee of the IEEE Nanotechnology Council, is responsible for operating issues such as evaluating proposals, coordinating with the local host, selecting participants, and determining the topic of each summer school. The final decision on a summer school proposal rests with the Executive Committee of the IEEE Nanotechnology Council, upon recommendation of the Summer School Subcommittee.

In particular, but not limited to the following, the Summer School Subcommittee members perform the following activities:

1. Advertise the summer school by distributing calls for summer school proposals to interested local hosts and call for participants to senior undergraduate, graduate students, post-doc and young researchers and practitioners.
2. Solicit potential local host and financial support.
3. Evaluate summer school proposals and coordinate with the local host to select a suitable topic, place, date.
4. Propose lecturers for the summer school based on the topic or theme.
5. Coordinate discussions and other activities during the summer school.

Important Dates:

- Eligible period: May to September, 2018
- Deadline for submitting the proposal: 30 September 2017
- Notification of the outcome of the review process: 31 October 2017

Please submit proposals to the Summer School Subcommittee Chair, Prof. Arunkumar Subramanian at sarun@uic.edu. Potential hosts are encouraged to contact the subcommittee to express their interest, and to work with the subcommittee so as to strengthen their proposals.