

GUIDANCE PACKAGE
for the
2014 Assistant Secretary of the Navy (Research, Development, and Acquisition)
Top Scientists and Engineers of the Year Award

Nominations are due no later than **January 16, 2015**.

ELIGIBILITY

Top scientists and engineers are eligible for the “Top Navy Scientists and Engineers Award” based on the following criteria:

- Civilian or Military scientist or engineer in the Department of Navy.
- Achievement contribution was made or has culminated in the calendar year preceding the year in which the reward will be received.
- Achievement contribution is recognizable by the Research, Development, Acquisition, Test and Evaluation community, as well as senior leadership within the Department of Navy.
- Contributions are stellar significant achievements – as delineated by stellar quality, technical excellence, and impact as defined in these guidelines.

MAJOR COMMANDS

Major Commands (includes the Command and their claimancy) may submit up to 15 nominations (5 of which must be for those with 10 years or less service in government and non-government combined).

- Bureau of Medicine (BUMED),
- Marine Corps Systems Command (MARCORSYSCOM),
- Naval Air Systems Command (NAVAIR),
- Naval Facilities Command (NAVFAC),
- Naval Sea Systems Command (NAVSEA),
- Naval Supplies Systems Command (NAVSUP),
- Office of Naval Research (ONR)/Naval Research Lab (NRL), and
- Space and Naval Warfare Systems Command (SPAWAR).

Major Commands Nomination Responsibilities:

- Notify Command and claimancy organizations that ASN RDA is calling for nominations for the ASN RDA Top Scientists and Engineers of the Year Award for work accomplished in the year 2014.
- Provide Command and claimancy organizations with the “Call for Nominations” memo and its Guidance Package.
- Solicit nominations for 2014 accomplishments from the Command and claimancy (SYSCOMs, Warfare and System Centers, the Naval Research Laboratory, the Office of

Naval Research, the Navy Bureau of Medicine and Surgery, and other Naval organizations that have eligible scientists and engineers).

- Designate a POC from each major command to coordinate the submission of nominees from claimancy/associated organizations. ***Please note that Nomination Packages that do not follow guidance and are not formatted correctly will not be eligible for the award and will be returned to the sending organization.***
- Thoroughly screen, evaluate, and rank nominations for compliance to guidelines.
- Ensure Commanding Officers of Major Commands personally endorse nominations.
- Consolidate and submit ranked nominations to DASN RDT&E Award POCs.

Major Commands Post Award Selection Responsibilities:

- Notify nominees selected for an award on receipt of ASN RDA Announcement letter.
- Major Command POCs will communicate with DASN RDT&E POCs to receive guidance on the preparation for the award ceremony.
- Major Command POCs will provide guidance to Command and claimancy awardees to prepare for the ceremony.
- Not later than (NLT) two weeks before the award ceremony, awardees will deliver an electronic copy of a poster focusing on their accomplishment and its relevance to fit on a 20" x 30" poster board. It will be on exhibit at the award ceremony.
- NLT two weeks before the award ceremony, awardees will also deliver a power point slide with a horizontal orientation that represents the content of their poster on a CD.
- Secretariat, Command, and claimancy leadership and personnel will support award winners and have leadership presence at the ceremony.

NOMINATIONS ADMINISTRATION

- Submissions shall be emailed to DASN RDT&E Award POCs as Microsoft Word documents in Times New Roman, size 12 Font.
- Endorsement memos may be in PDF format.
- Submit only the most outstanding nominees, as endorsed by Commanding Officers, for consideration and evaluation by the executive review panel.
- All nominations shall adhere to the format provided in the Nomination Package Format section of this guidance.
- A maximum of fifteen (15) nominees from each command will be accepted.
 - Five (5) of the 15 nominations from each Major Command are exclusively for personnel with no more than 10 years of government and non-government employment prior to nomination for the award.
 - One group counts as one nomination.
 - Groups with more than 5 people must be preapproved by DASN RDT&E prior to submittal of nomination.
 - DASN RDT&E Award POC must be contacted to coordinate preapproval for groups larger than 5.
 - Preapproval of groups larger than 5 people must be attained in advance of submitting nominations.

- Justifications indicating the critical role of each group member towards the accomplishment must be included in the nomination package.
- Identify whether the nomination is for an individual, group, emergent investigator, or emergent investigator group.
 - All members of an emergent investigator group must be emergent investigators.
 - Emergent investigators and emergent investigator groups will be selected separately from individuals and groups.
- Classified nominations up to the Secret level will be accepted if security classification requirements dictate that an unclassified package cannot be submitted.
 - Notify the DASN RDT&E Award POC within the specified delivery date if classified nomination will be submitted – include date and time of delivery.
 - Send classified materials to the classified email address of the DASN RDT&E Award POC.
 - Send notification to the DASN RDT&E Award POC via NIPRnet that a classified nomination was delivered.
 - The Nomination Package Format section of this guidance will be used with appropriate classification markings for classified nominations.
 - Provide an unclassified statement suitable for press release.
 - A classified addendum to an unclassified nomination is acceptable as long as the amalgamation of both are within selection criteria guidelines and does not exceed the page length guidelines established in the Nomination Package Format section of this guidance.

SELECTION CRITERIA

Nominations will be reviewed, evaluated, ranked, selected, and recommended for an award by an executive selection panel based on the stellar quality of the nomination and the two selection criteria below – Technical/Scientific Merit and Operational Impact. The questions in the bullets under each criteria below are provided as guidance for the type of information to be included in the nomination write-up for the each criteria. Stellar quality for each nomination will be assessed by all executive panel members and will be used to influence technical/scientific merit and operational impact. The stellar quality paragraph should emphasize the qualities of the accomplishment that make it stand out.

- Technical/Scientific Merit (up to 450 words – 50%):
Describe the technical/scientific merit of the accomplishment: Technical excellence reflects program success in the accomplishment of work as determined by peer and above acknowledgement, and demonstrated by the use of sound techniques, practices, and procedures; skill and expertise; evidence of scientific basis; thorough vetting and rigor applied to work effort so that it surpasses expectations; and improvements of military importance. Sample description content:
 - What was accomplished?
 - How well was it accomplished?

- How did the accomplishment address Naval needs, requirements, and/or gaps – present and/or future?
- What skill and expertise was needed for this to be a successful accomplishment?
- What is the scientific basis of the accomplishment?
- What challenges/adversities were presented and overcome to achieve successful outcomes with the accomplishment?
- What technical / scientific techniques, practices, and procedures led to recognizably outstanding outcomes.
- What experimentation and/or testing demonstrated the success of the accomplishment?
- If the accomplishment contributes to a larger effort that was not to be completed during the award year, what use will be made of the accomplishment towards the larger effort – what progress was made towards the larger effort?
- What prototypes, models, software, technologies, tools, processes, and/or research were used/developed for experiments/solution(s)?
- What is new, unique, or special in this approach and why is it successful – does it add to the scientific/engineering literature?
- Can the design/experiment/solution be replicated / recreated and if so, with what difficulty?
- What review/comment feedback was received from peer, supervisor, higher authority, both internal and external to your organization, on the accomplishment?
- Operational Impact to DON/DoD (up to 450 words – 50%):
Describe the impact and significance of the accomplishment and problem solution:
Impact is the quantitative and/or qualitative measure of change to national defense, Navy, or Marine Corps conditions and/or capabilities existing prior to achieving the accomplishment. Sample description content:
 - What DoD, Navy, or Marine Corps condition or capability changed as a result of the accomplishment?
 - What was the qualitative and/or quantitative measure of the change due to the accomplishment?
 - Were there prior attempts to the DoD, Navy, or Marine Corps condition or capability that resulted in partial or temporary solutions?
 - What value did this accomplishment add beyond prior attempts?
 - What risks were taken and the resultant payoffs?
 - How reliable, maintainable, and sustainable is the product(s) of the accomplishment?
 - What organizational benefits or advancements in the field were derived from the solution/partial solution?
 - How was the accomplishment communicated so that benefit to Navy, Marine Corps, and DoD across communities is optimized and shared?
 - What was the cost benefit of the accomplishment and why was it worth the cost?

- How do products/documents from the accomplishment cross organizational and functional domains?
- Has the accomplishment or technical/scientific solution been transitioned; e.g., to a higher TRL level, a Program of Record, or adopted by the Fleet?
- Will the accomplishment have a significant positive impact on Navy, Marine Corps, or on Fleet tactics, techniques and procedures (TTPs) or CONOPS?
- **Stellar Quality (up to 200 words; > 200 words is non-compliant – this is a Bonus)**
Describe the stellar qualities not identified under technical/scientific merit and impact that make the accomplishment stand out above the norm and above performance of assigned duties.
 - Awards and/or benefits received
 - Innovation within the accomplishment
 - Command or other acknowledgements (peers, field of knowledge, Secretariat, others) received by and beyond immediate supervisor
 - Media coverage
 - Warfighter urgency of capability/technology solution/need
 - Actual dollar savings/outstanding value to DoD/DON
 - Other factors that make the nomination star quality

NOMINATION PACKAGE FORMAT

Nomination should be delivered in **Microsoft Word Format**, using Times New Roman size 12 font.

PART I

For Individual or Emergent Investigator:

- Name of Nominee
- Name of Accomplishment
- Nomination Category: Individual or Emergent Investigator (less than 10 years)
- Present Position
- Brief statement of duties and responsibilities
- Title, grade or rank
- Organizational location
- Name, phone number and email address of original submitting official
- Immediate supervisor
- Activity or station
- Command Endorsement Signature
- Award POC (Major Command award coordinator)

For Group or Emergent Investigator Group:

- Group Name
- Name of Accomplishment
- Nomination Category: Group or Emergent Investigator Group (less than 10 years)
- Name of all Nominee Members
- Group Member Contribution: Briefly discuss contribution made by each individual.
- Present Position of each Member
- Brief statement of duties and responsibilities of each member
- Title, grade or rank
- Organization and Location
- Name, phone number and email address of original submitting official
- Immediate supervisor
- Activity or station and Location
- Command Endorsement Signature
- Award POC (Major Command award coordinator)

PART II (word limits)

- TECHNICAL/SCIENTIFIC MERIT (450 words).
- OPERATIONAL IMPACT (450 words).
- STELLAR QUALITY DESCRIPTION (200 words).

Additional Information for PART II (100 words):

- If the nominee has less than ten years of government service, indicate the nominee's potential in Naval science and technology development.

PART III

- PRESS RELEASE:
 - A 100-word, unclassified summary of the achievement, suitable for use as a press release if nominee is selected for an award.
- CITATION:
 - A recommended brief, but power packed citation addressing the full impact of the contribution (on a separate page)

**(Sample Award Winning Nomination from 2013 Awards)
20nn Top Scientists and Engineers of the Year Award Documentation**

Names and information about personnel have been changed to protect PII.

PART II:

TECHNICAL MERIT – Description of the Achievement:

Dr. John Doe led the effort to obtain a detailed understanding of how nanoparticles (NPs) interact with biological systems (e.g., mammalian cells). His research has been integral to answering the most basic research issues of this growing field, specifically, how to take advantage of the unique size-dependent properties of NPs as probes for cellular imaging, labeling and sensing for use in applied medicine and nanotechnology. Further, his discoveries applied to the rapidly-expanding field of NP-mediated drug delivery will have significant impact on warfighter protection and treatment. His development of the method to deliver the nanoparticles to the cells in a noninvasive, nontoxic way represents significant advances in the practical use of NPs for cellular applications.

In 2013, his research efforts over the past seven years culminated from an academic curiosity into a valuable research tool for labeling and imaging cellular structures and sensing cellular processes. Dr. Doe guided research efforts to develop peptides (small functional units of larger proteins) to deliver a specific type of NPs called Quantum Dots (QDs) to discrete locations throughout the cell with fine control over the amounts delivered to specific locales. He has further demonstrated the combinatorial use of a range of delivery techniques to deliver multiple, different color QDs with spatiotemporal control to live cells.

Cumulatively, Dr. Doe's research has demonstrated: (i) the utility of QDs decorated with functional molecules (e.g., peptides, proteins) for labelling different parts of cells, (ii) the use of QDs as carriers of cargo delivered to cell interior, (iii) the simplistic nature of multicolor labeling of live cells using QDs which enabled interrogating different cellular processes, (iv) the use of QDs as realtime pH sensors in living cells, and (v) the safe, non-toxic nature of QDs when delivered to cells for these purposes. The latter study, completed in 2013, represents major progress towards the practical use of NP materials for cellular applications. Dr. Doe's approach to deliver design, multidomain, multifunctional peptides with QDs has become a new paradigm in NP delivery for other nanoparticle researchers.

IMPACT: The value of Dr. Doe's research efforts to DON/DoD is multifold. Per the President's National Nanotechnology Initiative (Research Directions 2020), DoD is directly tasked with remaining at the forefront of research efforts that specifically emphasize the development of "smart nanomaterials for the analysis of molecular and subcellular events at the nanometer scale". Understanding how to control NP materials within the context of cells is critical to success in this endeavor. The knowledge base resulting from this research will have a direct impact on future DON/DoD operations as NP-based diagnostics and therapeutics are already beginning to play a role in the maintenance of warfighter health. Further, this research provides a potential protective/defensive function as it facilitates the design and fabrication of

protective countermeasures meant to defeat the potential harmful uses of NP formulations that troops could encounter in the field.

STELLAR QUALITY – Description of Achievement Quality:

Dr. John Doe has been issued a patent for Modular Functional Peptides for Delivery of Nanoparticles (NPs). His work is in the forefront for using peptides to deliver nanoparticle cargo to living cells. Damaged cells will be able to get materials needed for their repair or destruction without damaging surrounding cells. Dr. Doe's work, has been highly cited in the peer-reviewed literature and he has earned an international reputation as a subject area expert on the cellular applications of Quantum Dots (QDs) and NPs in general, as demonstrated in 2013 by invited talks at the 2013 Indo-U.S. International Workshop on Nanosensor Science and Technology (co-sponsored by Office of Naval Research-Global (ONR-G)) and Nanomaterials 2013, an international conference organized by Associate Editor of *ACS Nano*. His work has been published in top tier journals (>20 peer-reviewed papers including five invited peer-reviewed review articles on the cellular applications of NPs) and it has been highly cited (>1500 citations, H-index of 26).

PART III:

PRESS RELEASE: Dr. Doe spearheaded the implementation of nanoparticle materials in cellular applications (specifically, semiconductor quantum dots (QDs)) for the purposes of cellular labeling, imaging and sensing. Understanding the interaction of nanoparticle materials with living systems is a critical endeavor for DON/DoD and the larger scientific community, as nanoparticles find increasingly more uses in manufacturing processes, medical diagnostics and in therapeutic formulations. In 2013, his work on understanding the cellular uptake and distribution of QDs demonstrated how these materials can be used as superior alternatives to traditional fluorophores for cellular labeling, sensing, cargo delivery and the modulation of cellular behavior.

RECOMMENDED CITATION: Dr. Doe is recognized for his instrumental role in developing a new multifunctional peptide-based platform to deliver nanoparticles to cells, thereby opening the ability to target specific cells to receive curative/destructive nanomaterials. This has become a new paradigm for the nanoparticle research community and has significantly advanced the nanoparticle research community's understanding of how to control nanomaterials within cells and how to target cargo delivery to specific sites within an individual living cell. The knowledge base resulting from his research will have a direct impact on future DON/DoD operations as NP-based diagnostics and therapeutics are already beginning to play a role in the maintenance of warfighter health.