IEEE Div I Joint Webinar, Jan. 10, 2024

Am I qualified to Be an IEEE Fellow?

### D. Tan, Ph.D., IEEE Fellow

Chair, IEEE Transportation Electrification Council (Community), 2023-Chair, IEEE Fellow Committee, IEEE Board of Directors, 2022-Division II Director, IEEE Board of Directors, 2017-2018
Editor-in-Chief (Founding), IEEE JESTPE, 2013-2018
President, IEEE Power Electronics Society, 2013-2014
Chair, IEEE/Google Little Box Challenge (\$1M Awarded), 2014-2015
Chair, IEEE std 1515 & 1573 Working Groups, 1997-2004
Chair, IEEE PELS LAC Chapter, 1995-1999

Jan. 10, 2024

















## **About Myself**

- Current Chair of the IEEE Fellow Committee, Vice Chair of the IEEE Industry Engagement Committee last year, Chair of IEEE Transportation Electrification Community (Council in 2024), and leadership roles for many other BoD/TAB committees
- Served as IEEE Director (Division II), IEEE Board of Directors; President of the IEEE Power Electronics Society; IEEE Chair, Google/IEEE Little Box Challenge (\$1M cash awarded); Founding EiC, IEEE Journal of Emerging and Selected Topics in Power Electronics; General Chair, IEEE Applied Power Electronics Conference; IEEE/DoD Joint Working Group Chair for IEEE/ANSI stds 1515 & 1573, PELS LA Chapter Chair, and numerous others
- Services up to executive level with Northrop Grumman Space Systems: Distinguished Engineer, Fellow, Chief Engineer-PC, Sr. Department Manger, Center Director (acting) and program mangers and technical leads for numerous technology development and critical national missions (in 100's of millions of dollars)





## **IEEE Membership Grades**

IEEE Constitution & Bylaws define the following grades

### I-101. Grades

- The grades of IEEE membership and their abbreviations are:
  - a) Honorary Member H or HIEEE
  - b) Fellow F or FIEEE
  - c) Senior Member SM or SMIEEE
  - d) Member M or MIEEE
  - e) Associate Member AM or AMIEEE
  - f) Graduate Student Member GSM or GSMIEEE



The Fellow Program is one of the IEEE's crown jewels!



## **IEEE Membership Grades**

- IEEE Bylaws define the following qualifications
- 2. Fellow. The grade of Fellow recognizes unusual distinction in the profession and shall be conferred by the Board of Directors upon a person with an outstanding record of accomplishments in any of the IEEE fields of interest (Bylaw I-104.11). The accomplishments that are being honored shall have contributed importantly to the advancement or application of engineering, science and technology, bringing the realization of significant value to society. The nominee shall hold Senior Member grade at the time the nomination is submitted and shall have been a member in good standing in any grade for a period of five years or more preceding 1 January of the year of elevation. Additional eligibility requirements for nominees and others involved in the submission and evaluation process,

as well as other related procedures, shall be specified in the IEEE Fellow Committee Operations Manual. The year of elevation to the grade of Fellow is the year following approval by the Board of Directors conferring the grade of Fellow. Members elevated to the Fellow grade may use the title immediately following approval by the Board of Directors. All those elevated will receive a certificate and pin.



# **IEEE Membership Grades**

 Senior Member. The grade of Senior Member is the highest for which application may be made and shall require experience reflecting professional maturity. For admission or transfer to the grade of Senior Member, a candidate shall be an engineer, scientist, educator, technical executive, or originator in IEEE-designated fields (Bylaw I-104.11).

The candidate shall have been in professional practice for at least ten years and shall have shown significant performance over a period of at least five of those years, such performance including one or more of the following:

- a) Substantial responsibility or achievement in one or more of IEEE-designated fields; or
- b) Publication of papers, books, or inventions in one or more of IEEE-designated fields; or
- Technical direction or management of important work with evidence of accomplishment in one or more of IEEE-designated fields; or
- Recognized contributions to the welfare of the professions encompassed by one or more of the IEEE-designated fields; or
- e) Development or furtherance of important courses in one or more of the IEEE-designated fields at an accredited institution; or
- f) Contributions equivalent to those of (a) to (e) in areas related to IEEE-designated fields, provided these contributions serve to advance progress substantially in IEEE-designated fields.



## Judging Yourself: Don's 10% Rule

- There is no cut-and-dry rules as to effectively judging yourself for qualifications
  - A few worthy achievements (technical contributions in RE/S, TI, EDU, TL & STDC)
  - 10-15 years of (independent) professional experience
  - (Not necessarily a life achievement award)
- Don's 10% Rule:
  - Ask yourself if you have one or two (or even three) technical contributions in your particular technical field that can be roughly ranked in the top 10% by your peers
- ROM estimate as follows:
  - 0.1%/year x 30 years=3%
  - Typical 3:1 ratio for selection in recent years → 9%
  - So, 10% is a good round number to use

All you need is to have 2-3 contributions in the top 10% of your special field!



# Judging Yourself: Read the Sample Profiles

- Qualification profiles are excellent resources to help you in judging your qualifications
- There are currently four (4) profiles are available, with four (4) more profiles are being developed

IEEE Fellow Committee Recommendation Guide - How to Write an Effective Nomination (October 2020) 15.1 Nomination 17 15.2 References 17 15.3 Endorsements 18 16. FURTHER READING 18 17. ANNEX - NOMINATION EXAMPLES 19 17.1 Example of Application Engineer/Practitioner Nomination 20 17.2 Example of Educator 22 Example of Research Engineer/Scientist Nomination 24 17.4 Example of Technical Leader Nomination 26



# Judging Yourself: New Contribution Characterization Matrix

Table 1 – Contribution Categories and Evidence Domains: Documenting the nature, extent, and impact of technical contributions

|                                  | Research Publications  | Peer-Reviewed Materials  | Designs, Products, Processes, Algorithms, Systems, and Public/Industrial<br>Contributions  | Patents/Trade Secrets  | Standards   |
|----------------------------------|--|--|--|--|---|
| Generic<br>Gefick<br>URD/<br>Ex- | Scholarly cited articles, refereed papers in archival<br>journals (not survey papers), edited or authored books,<br>papers in technical reports or other refereed<br>publications.   | Tutorials, survey papers, position papers, white papers, articles<br>in popular press, internal reports, books about practice in the<br>field, and other documents describing the development/<br>application of products, systems, facilities, services, or software.   | Contributions that demonstrate development of industrial/gualic<br>systems, deployments, and innovations. Examples include building and<br>habitation, space, utilities infrastructure, social networking,<br>telecommunications, devices, solid state technologies.   | Any type of document or legal arrangement<br>protecting Intellectual Property.   | Contributions that 1) define the framework, reference, functional or design architectures for a<br>standard or family of standards, 2) demonstrate strong technical skills in leading a standards project<br>or task, 3) demonstrate direct or indirect original technical content in a standard project that is<br>adopted into a published standard or widely accepted specifications.  |
| RE/S                             | Contributions in this Category normally have significant evidence from this Domain.  Role of nominee in articles' authorship and impact on: -future research directions or commercialization, -iterature (article Citations), -technology (question or standards citations), -society at-large (articles in popular press) -Endournements may provide decumentation for proprietary or citatished contributions.   | Contributions in this Category may be supported by evidence from this Domain, but such evidence is not normally expected. Significance-impact should NOT be penalized by the absence of evidence from this Domain.   | Contributions in this Category typically do not have evidence from this<br>Domain.   | Contributions in this Category may be supported by evidence from this Domain, but such evidence is not normally expected. Significance-impact should NOT be ponalized by the absence of evidence from this Domain.   | Contributions in this Category typically do not have evidence from this Domain.   |
| TI                               | Contributions in this Category commonly do not have evidence from this Domain.   | Contributions in this Category may be supported by evidence from this Domain, but such evidence is not normally espected. Significance impact should NOT be penalized by the absence of evidence from this Domain.   | Contributions in this Category normally have significant evidence from this Domain.  QUESTION: The category of TI (old AF/P) is still vague to me. This needs work.  Individual role of the nominine in the team/initiative (if any).  Technical contribution or innovation, risk invoked, performance improvement, economic results, or other advantages.  Level of adoption of the technical contribution.  Financial impact of the technical contribution, e.g., generated revenue, costs reduction.  | Contributions in this Category normally have<br>significant evidence from this Domain.<br>Difference of contribution and linguact is similar to<br>that of contributions from Designs, Products,<br>Processes, Algarithms, Systems, and<br>Public/Industrial Contributions   | Contributions in this Category may be supported by evidence from this Domain, but such evidence is not normally expected. Significance-impact should MOT be penalized by the absence of evidence from this Domain.  |
| TL.                              | Contributions in this Category commonly do not have evidence from this Domain.   | Contributions in this Category may be supported by evidence from this Domain, but such evidence is not normally expected. Significance-impact should NOT be penalized by the absence of evidence from this Domain.   | Contributions in this Category normally have significant evidence from this Domain.  - Role of the nominee in the technical leadership of a team, company, or industry, wide effort, not solely managerial position.  - Technical contribution or innovation, risk invoked, performance improvement, economic results, or other advantages  - Invancial impact of the technical contribution  - Financial impact of the technical contribution, e.g., generated revenues, costs reduction  Endorsements may provide documentation for proprietary or classified contributions. | Contributions in this Category normally have significant evidence from this Domain.  Patents and trade secrets can have impacts similar to those in Designs, Products, Processes, Algorithms, Systems, and Public/Indiastrial Contributions. In this case, the role of the patent(s) in the contribution impact should be highlighted along with how Technical Leadership is demonstrated. | Contributions in this Category may be supported by evidence from this Domain, but such evidence is<br>not normally expected. Significance-impact should NOT be parallized by the absence of evidence<br>from this Domain.   |
| EDU                              | Contributions in this Category may be supported by evidence from this Domain, but such evidence is not mornally expected. Significance/impact should NOT be penaltized by the absence of evidence from this Domain.  However, formal educational research (e.g., pedagogy, assessment, curricula) published in engineering education journals may be troogly supportive.  Research publications in other technical areas generally are not evidence of contribution. | Contributions in this Category normally have significant evidence from this Domain.  Contributions may include widely used ploneering texts, laboratory experiments, papers on engineering education practice.  Laboratory experiments, papers on engineering education practice.  Adoption of impact can include:  Adoption of textbooks, new curricula or courseware, MOOC courses, TLD presentations.  Level of outreach to underrepresented populations, and/or regions. | Contributions in this Category commonly do not have evidence from this Domain.   | Contributions in this Category may be supported<br>by evidence from this Domain, but such<br>evidence is not normally expected.<br>Significance/impact should NOT be penalized by<br>the absence of evidence from this Domain.   | Contributions in this Category commonly do not have evidence from this Domain.  |
| sc                               | Contributions in this Category commonly do not have evidence from this Domain.   | Question: Should we discourage Peer-reviewed materials contribution being designated by standards category (i.e., change to No Color).  Contributions in this Category may be supported by evidence from this Domain, but such evidence is not normally expected. Significance/Impact should NOT be penalized by the absence of evidence from this Domain.   | Contributions in this Category may be supported by evidence from this Domain, but such evidence is not normally expected.<br>Significance/impact should NOT be penalized by the absence of evidence from this Domain.  | Contributions in this Category may be supported<br>by evidence from this Domain, but such<br>ovidence in not normally expected.<br>Significance/impact should NOT be penalted by<br>the absence of evidence from this Domain.  | Contributions in this Category normally have significant evidence from this Domain.  Evidence of impact for a Standards Contribution is generally more extensive than evidence in other Contribution Categorius and the Contribution of the contribution may use IEEE SA Contributor Collection, Internet Engineering Task Force's CIFF3) RPC, and/or other Standards Development Organizations' or alliances' publications certifying industal contributions or working group meeting minutes. Impact teclulates 13 Norminees's impact on the standard, as accessed by reference and endoster restimony, related publications and patient activity. IEEE, or other awards with Cations to the relevant standard, degree of incorporation of the task or project into a standard, norminee's recognised atthresis statuse in the field and poer-incognized authority in the standard's Vorking Group.  2) Broader impacts of the standard, which includes Functional, scientific, economic, market and societal algority. |



# Judging Yourself: New Contribution Characterization Matrix

| Т |  | 1   |   |   |  |   |
|---|--|---|---|---|--|---|
|   |  |   |   | Evidence Domain   | S  |   |
|   |  | Research<br>Publications  | Peer-Reviewed<br>Materials  | Designs, Products,<br>Processes,<br>Algorithms, Systems,<br>and Public/Industrial<br>Contributions  | Patents/Trade<br>Secrets   | Standards   |
|   | Generic<br>Defini-<br>tion/<br>Ex-<br>amples | Scholarly cited articles,<br>refereed papers in<br>archival journals (not<br>survey papers), edited<br>or authored books,<br>papers in technical<br>reports or other<br>refereed publications.  | Tutorials, survey papers, position papers, white papers, articles in popular press, internal reports, books about practice in the field, design review packages, and other documents describing the development/ application of products, systems, facilities, services, or software. | Contributions that demonstrate development of industrial/public systems, deployments, and innovations. Examples include building and habitation, space, utilities infrastructure, social networking, telecommunications, devices, solid state technologies. | Any type of document or legal arrangement protecting Intellectual Property.  | Contributions that 1) define the framework, reference, functional or design architectures for a standard or family of standards, 2) demonstrate strong technical skills in leading a standards project or task, 3) demonstrate direct or indirect original technical content in a standard project that is adopted into a published standard or widely accepted specifications. |
|   | RE/S   | Contributions in this Category normally have significant evidence from this Domain.  Role of nominee in articles' authorship and impact on: - future research directions or commercialization, - literature (article citations), - technology (patent or standards citations), - society at-large (articles in popular press). Endorsements may | Contributions in this Category may be supported by evidence from this Domain, but such evidence is not normally expected. Significance- impact should NOT be penalized by the absence of evidence from this Domain.   | Contributions in this<br>Category typically do not<br>have evidence from this<br>Domain.  | Contributions in this Category may be supported by evidence from this Domain, but such evidence is not normally expected. Significance-impact should NOT be penalized by the absence of evidence from this Domain. | Contributions in this Category<br>typically do not have evidence<br>from this Domain.   |





The new contribution matrix can level the playing field to enhance technical diversity!

## Find a Mentor/Sponsor

- An IEEE mentor can
  - Help to understand how IEEE operates, globally and locally
  - Serve a sounding board to bounce off your thoughts
  - Has the potential to be a nominator for you
- An IEEE sponsor
  - Advocate on your behalf for opportunities to volunteer
  - Critique you thoughts and qualification
- A mentor/sponsor relationship cannot be forced and you should form/develop the relationship naturally
- The best way of getting this relationship going is to volunteer for one or more technical societies (councils) to get to know people and to let people get to know you



# Importance of your Nomination Package

- The nomination form is an essential document for the entire fellow elevation and selection process, since it is the only venue for a nominator to make the case for his/her nominee to various evaluating committees
  - Select for yourself two (2) contribution categories out of five (5)
  - It is reviewed and assessed by three separate processes: the Fellow Grade References/Endorsement, the Society/Technical Council (S/C) Fellow Evaluating Committee (FEC) (CFEC\* beginning in 2024), and the IEEE Fellow Committee (FC)
  - The Nomination should not only be written for experts in a nominee's area of work, but also for any IEEE member who is experienced in any technical subject area within the IEEE fields of interest (Being able to understand the importance and impact of the Nominee's contributions from the completed nomination form as generalists)

<sup>\* -</sup> CFEC (Cohort fellow evaluation committee): A group of S/Cs' representatives where their respective nomination pools were relative small in recent years. The prime task for a CFEC is to develop a consolidated ranking of all the nominees from the rankings of their constituent S/C FECs.



# Importance of your Nomination Package

- A well-written nomination form includes three fundamental aspects:
  - The individual contribution(s) to the field made by the nominee
  - The impact from these contributions (Must have already occurred) to the society at large
  - The verifiable evidences supporting the contributions

### Note also

- Concise narratives that explicitly address these three aspects are more effective
- Excessive superlatives will reduce the effectiveness of an otherwise-well-written nomination



## References and Endorsement Letters

- A nominee can have up to five (5) references, which are the assessments of five (5) IEEE fellows on a nominee's qualification
- Their assessments are highly influential in the S/C FEC (and CFEC) and IEEE FC evaluation and hence selection
- References should focus on the specific contributions listed in the nomination and provide specifics on how the nominee's contributions have impacted the society at large
  - Reference writers are chosen by the nominator to advocate for the nominee and provide information about the value and impact of the nominee's contributions
  - A nominator chooses reference writers that are not affiliated with the nominee, but know and understand the nominee's work
- For more details, refer to <u>Effective References and Endorsements</u>



### References and Endorsement Letters

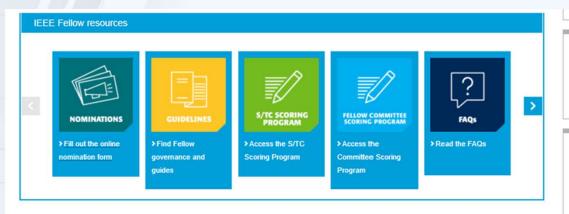
- A nominee can have up to a maximum of three (3) endorsement letters
- A person with first-hand knowledge about a nominee's contributions can submit an endorsement letter, regardless of IEEE membership or grade
- An endorsement letter is most valuable in providing evidences for a nominee's contribution and impact to society at large
  - Provides additional evidence of impact/contribution that may have been proprietary at the time they were developed and not available in any open literature
  - Supports a nomination when the nominee performed proprietary or classified work for which there is little available public evidence(s)
  - Endorses an EDU nomination to attest to broad adoption of a textbook or educational leadership, in which case endorsement letters are most effective when written by a company officer, a program director, a committee chair or standards
  - For more details, refer to <u>Effective References and Endorsements</u>



### References and Endorsement Letters

- Three ways to find a potential reference writer
  - Search IEEE Fellow Directory online (IEEE fellows website, more later)
  - Ask your chapter, society or adjacent society for help (Join S/Cs if not already)
  - IEEE is mandating S/C Fellow Nomination Committee in parallel to the S/C FECs to enhance the nomination process for S/C with more than 15 nominees





**IEEE Fellow Directory** 

#### Access the directory

Statistics

Note: If a member is "active," a Fellow or Life Fellow, and they want their name to appear in the Fellow Directory, they must have "opted in" when they renewed. If unsure, the member can update his/her profile by going to https://www.ieee.org/membership/renew.html, scrolling down to "Additional Resources," and clicking on "update your member profile."

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https://www.ieee.org/membership/fellows/index.html

Contact the IEEE Fellow Activities
Staff

E-mail: fellows@ieee.org

IEEE-USA Government Fellowships

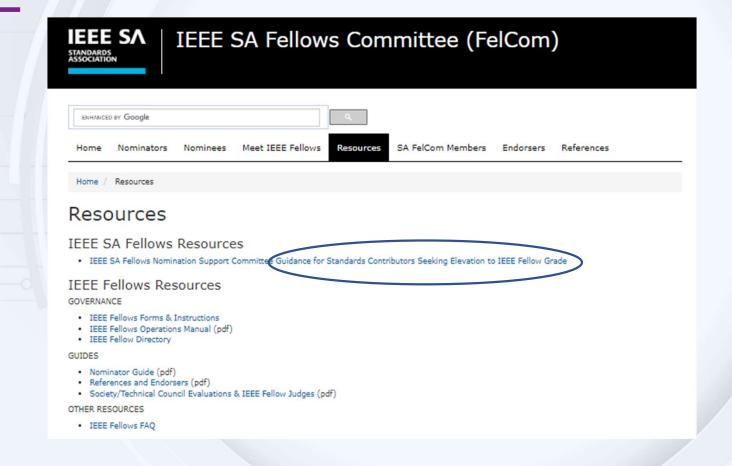
Learn more about IEEE-USA Government Fellowships

#### **IEEE Fellow News**

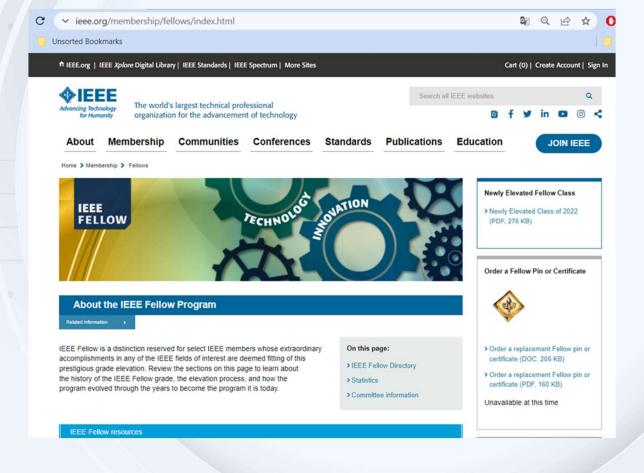
IEEE Fellow (2009) Chai K Toh has been elected to International Fellow of The Royal Academy of Engineering UK. Learn more.



### **IEEE Standards Board Fellow Resources**









### **IEEE Fellow Guidelines**

#### Fellow Governance

- > View IEEE Bylaws (PDF, 2 MB)
- > Fellows Operations Manual (PDF, 470 KB)
- > Fellow Nomination and Evaluation Forms (PDF, 472 KB)
- > Fellow Committee Handbook (PDF, 686 KB)
- > Society/Technical Council Fellow Committee Handbook (PDF,

272 KB)

#### **Fellow Guides**

- > Nominator Guide (PDF, 820 KB)
- > References and Endorsers (PDF, 138 KB)
- > Society/Technical Council Evaluations & IEEE Fellow Judges (PDF,

370 KB)



#### Statistics

- · Fellow Statistics Affiliation (PDF, 38 KB)
- · Fellow Statistics Category Affiliation (PDF, 39 KB)
- · Fellow Statistics Regional Affiliation (PDF, 63 KB)
- Fellow Statistics Summary Year (PDF, 13 KB)
- · Fellow Statistics Women Elevated (PDF, 31 KB)

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#### Committee information

Apply for the Fellow Committee. See guidelines for nominating yourself or an applicant to be on the IEEE Fellow Committee.

See Fellow Committee members: 2022 Fellow Committee members (PDF, 71 KB)

#### Past members include:

> 2021 Fellow Committee members (PDF, 176 KB)

> 2020 Fellow Committee members (PDF, 507 KB)

>2019 Fellow Committee members (PDF, 440 KB)



## Document Updates for the Improved Process

### **Fellow Program FAQs**

Related information

#### Nominator/Nominee FAQs

Learn more about several aspects of the IEEE Fellow Program by reviewing the frequently asked questions answered below. Please download the IEEE Fellow Program brochure. If you have a question that is not addressed, email fellows@ieee.org.

> Nominator/Nominee FAQs - Updated (PDF, 166 KB)

### Society and Council FAQs

These FAQs were developed to help Societies and Councils navigate the changes to the IEEE Fellows process for the implementation of the IEEE Board approved recommendations. Please see the IEEE Fellow Committee Operations Manual for additional information.

> Society and Council FAQs - New (PDF, 164 KB)



# Document Updates for the Improved Process

Board approve

IEEE Fellow Guidelines

#### **Fellow Governance**

- > View IEEE Bylaws (PDF, 2 MB)
- > Fellow Committee Operations Manual (February 2020) (PDF, 470KB)
- > Fellow Committee Operations Manual (Effective October 2023) New (PDF, 708 KB)
- > Fellow Nomination and Evaluation Forms (PDF, 472 KB)
- > Fellow Commuttee Handbook (PDF, 686 KB)
- > IEEE Fellow Nomination Contributions Matrix New (PDF, 106 KB)
- > Society/Technical Council Fellow Committee Handbook (PDF, 272 KB)

#### **Fellow Guides**

- > Nominator Guide (PDF, 820 KB)
- > References and Endorsers (PDF, 138 KB)
- > Society/Technical Council Evaluations & IEEE Fellow Judges (PDF, 370 KB)



## 2023 and 2024 Stats

Class of 2023 & Class of 2024\*

| 2023  | R10   | R1-R7 | R8    | R9   | Industry | Female |  |
|-------|-------|-------|-------|------|----------|--------|--|
| 319   | 87    | 158   | 74    | 0    | 51       | 38     |  |
| 994   | 337   | 445   | 204   | 8    | 157      | 108    |  |
| 32.1% | 25.8% | 35.5% | 36.3% | 0.0% | 32.5%    | 35.2%  |  |

| 2024  | R10   | R1-R7 | R8    | R9    | Industry | Female | STDC  |
|-------|-------|-------|-------|-------|----------|--------|-------|
| 323   | 97    | 163   | 61    | 2     | 73       | 35     | 6     |
| 949   | 340   | 404   | 194   | 11    | 187      | 87     | 13    |
| 34.0% | 28.5% | 40.3% | 31.4% | 18.2% | 39.0%    |        | 46.2% |
|       |       |       |       |       | 001011   | 101211 |       |

<sup>\* -</sup> This year's female nomination number was lower



By employment affiliation

|          | 0         | NOMINA     | TIONS RECE | VED   | NOMINATIONS ELEVATED |           |            |          |       |       |
|----------|-----------|------------|------------|-------|----------------------|-----------|------------|----------|-------|-------|
| Class of | Education | Government | Industry   | Other | Total                | Education | Government | Industry | Other | Total |
| 1999     | 303       | 28         | 207        | 26    | 564                  | 132       | 13         | 83       | 11    | 239   |
| 2000     | 297       | 11         | 206        | 17    | 531                  | 133       | 7          | 103      | 5     | 248   |
| 2001     | 277       | 28         | 209        | 11    | 525                  | 139       | 13         | 98       | 6     | 256   |
| 2002     | 327       | 38         | 171        | 25    | 561                  | 143       | 14         | 91       | 11    | 259   |
| 2003     | 406       | 45         | 166        | 12    | 629                  | 165       | 14         | 76       | 5     | 260   |
| 2004     | 432       | 45         | 179        | 19    | 675                  | 150       | 22         | 82       | 6     | 260   |
| 2005     | 496       | 60         | 200        | 22    | 778                  | 176       | 23         | 58       | 11    | 268   |
| 2006     | 501       | 60         | 194        | 30    | 785                  | 173       | 17         | 69       | 12    | 271   |
| 2007     | 526       | 65         | 166        | 8     | 765                  | 167       | 27         | 71       | 3     | 268   |
| 2008     | 501       | 51         | 204        | 17    | 773                  | 188       | 17         | 84       | 6     | 295   |
| 2009     | 512       | 48         | 182        | 15    | 757                  | 204       | 15         | 78       | 5     | 302   |
| 2010     | 542       | 43         | 187        | 25    | 797                  | 206       | 17         | 72       | 14    | 309   |
| 2011     | 553       | 55         | 188        | 17    | 813                  | 211       | 18         | 85       | 7     | 321   |
| 2012     | 568       | 55         | 164        | 12    | 799                  | 234       | 19         | 71       | 5     | 329   |
| 2013     | 566       | 65         | 182        | 18    | 831                  | 191       | 24         | 77       | 5     | 297   |
| 2014     | 589       | 54         | 193        | 16    | 852                  | 192       | 23         | 67       | 11    | 293   |
| 2015     | 619       | 52         | 190        | 13    | 874                  | 211       | 21         | 65       | 3     | 300   |
| 2016     | 592       | 55         | 172        | 14    | 833                  | 219       | 21         | 55       | 2     | 297   |
| 2017     | 686       | 60         | 184        | 14    | 944                  | 223       | 17         | 54       | 5     | 299   |
| 2018     | 672       | 58         | 175        | 14    | 919                  | 209       | 21         | 63       | 3     | 296   |
| 2019     | 660       | 50         | 190        | 14    | 914                  | 208       | 14         | 71       | 2     | 295   |
| 2020     | 713       | 56         | 188        | 21    | 978                  | 207       | 13         | 56       | 6     | 282   |
| 2021     | 675       | 50         | 198        | 13    | 936                  | 207       | 7          | 60       | 8     | 282   |
| 2022     | 745       | 64         | 202        | 18    | 1029                 | 197       | 25         | 84       | 5     | 311   |
| 2023     | 760       | 58         | 157        | 19    | 994                  | 242       | 17         | 51       | 9     | 319   |
| 2024     | 699       | 51         | 187        | 12    | 949                  | 230       | 17         | 73       | 3     | 323   |



## By employment affiliation

|          | EDUC                  | ATION                 |              |
|----------|-----------------------|-----------------------|--------------|
| Class of | Education<br>Received | Education<br>Elevated | %<br>Success |
| 1999     | 303                   | 132                   | 43.6%        |
| 2000     | 297                   | 133                   | 44.8%        |
| 2001     | 277                   | 139                   | 50.2%        |
| 2002     | 327                   | 143                   | 43.7%        |
| 2003     | 406                   | 165                   | 40.6%        |
| 2004     | 432                   | 150                   | 34.7%        |
| 2005     | 496                   | 176                   | 35.5%        |
| 2006     | 501                   | 173                   | 34.5%        |
| 2007     | 526                   | 167                   | 31.7%        |
| 2008     | 501                   | 188                   | 37.5%        |
| 2009     | 512                   | 204                   | 39.8%        |
| 2010     | 542                   | 206                   | 38.0%        |
| 2011     | 553                   | 211                   | 38.2%        |
| 2012     | 568                   | 234                   | 41.2%        |
| 2013     | 566                   | 191                   | 33.7%        |
| 2014     | 589                   | 192                   | 32.6%        |
| 2015     | 619                   | 211                   | 34.1%        |
| 2016     | 592                   | 219                   | 37.0%        |
| 2017     | 686                   | 223                   | 32.5%        |
| 2018     | 672                   | 209                   | 31.1%        |
| 2019     | 660                   | 208                   | 31.5%        |
| 2020     | 713                   | 207                   | 29.0%        |
| 2021     | 675                   | 207                   | 30.7%        |
| 2022     | 745                   | 197                   | 26.4%        |
| 2023     | 760                   | 242                   | 31.8%        |
| 2024     | 699                   | 230                   | 32.9%        |

|          | INDUS                | STRY                 |              |  |
|----------|----------------------|----------------------|--------------|--|
| Class of | Industry<br>Received | Industry<br>Elevated | %<br>Success |  |
| 1999     | 207                  | 83                   | 40.1%        |  |
| 2000     | 206                  | 103                  | 50.0%        |  |
| 2001     | 209                  | 98                   | 46.9%        |  |
| 2002     | 171                  | 91                   | 53.2%        |  |
| 2003     | 166                  | 76                   | 45.8%        |  |
| 2004     | 179                  | 82                   | 45.8%        |  |
| 2005     | 200                  | 58                   | 29.0%        |  |
| 2006     | 194                  | 69                   | 35.6%        |  |
| 2007     | 166                  | 71                   | 42.8%        |  |
| 2008     | 204                  | 84                   | 41.2%        |  |
| 2009     | 182                  | 78                   | 42.9%        |  |
| 2010     | 187                  | 72                   | 38.5%        |  |
| 2011     | 188                  | 85                   | 45.2%        |  |
| 2012     | 164                  | 71                   | 43.3%        |  |
| 2013     | 182                  | 77                   | 42.3%        |  |
| 2014     | 193                  | 67                   | 34.7%        |  |
| 2015     | 190                  | 65                   | 34.2%        |  |
| 2016     | 172                  | 55                   | 32.0%        |  |
| 2017     | 184                  | 54                   | 29.3%        |  |
| 2018     | 175                  | 63                   | 36.0%        |  |
| 2019     | 190                  | 71                   | 37.4%        |  |
| 2020     | 188                  | 56                   | 29.8%        |  |
| 2021     | 198                  | 60                   | 30.3%        |  |
| 2022     | 202                  | 84                   | 41.6%        |  |
| 2023     | 157                  | 51                   | 32.5%        |  |
| 2024     | 187                  | 73                   | 39.0%        |  |

| GOVERNMENT |            |            |         |  |  |  |  |  |  |
|------------|------------|------------|---------|--|--|--|--|--|--|
|            | Government | Government | %       |  |  |  |  |  |  |
| Class of   | Received   | Elevated   | Success |  |  |  |  |  |  |
| 1999       | 28         | 13         | 46.4%   |  |  |  |  |  |  |
| 2000       | 11         | 7          | 63.6%   |  |  |  |  |  |  |
| 2001       | 28         | 13         | 46.4%   |  |  |  |  |  |  |
| 2002       | 38         | 14         | 36.8%   |  |  |  |  |  |  |
| 2003       | 45         | 14         | 31.1%   |  |  |  |  |  |  |
| 2004       | 45         | 22         | 48.9%   |  |  |  |  |  |  |
| 2005       | 60         | 23         | 38.3%   |  |  |  |  |  |  |
| 2006       | 60         | 17         | 28.3%   |  |  |  |  |  |  |
| 2007       | 65         | 27         | 41.5%   |  |  |  |  |  |  |
| 2008       | 51         | 17         | 33.3%   |  |  |  |  |  |  |
| 2009       | 48         | 15         | 31.3%   |  |  |  |  |  |  |
| 2010       | 43         | 17         | 39.5%   |  |  |  |  |  |  |
| 2011       | 55         | 18         | 32.7%   |  |  |  |  |  |  |
| 2012       | 55         | 19         | 34.5%   |  |  |  |  |  |  |
| 2013       | 65         | 24         | 36.9%   |  |  |  |  |  |  |
| 2014       | 54         | 23         | 42.6%   |  |  |  |  |  |  |
| 2015       | 52         | 21         | 40.4%   |  |  |  |  |  |  |
| 2016       | 55         | 21         | 38.2%   |  |  |  |  |  |  |
| 2017       | 60         | 17         | 28.3%   |  |  |  |  |  |  |
| 2018       | 58         | 21         | 36.2%   |  |  |  |  |  |  |
| 2019       | 50         | 14         | 28.0%   |  |  |  |  |  |  |
| 2020       | 56         | 13         | 23.2%   |  |  |  |  |  |  |
| 2021       | 50         | 7          | 14.0%   |  |  |  |  |  |  |
| 2022       | 64         | 25         | 39.1%   |  |  |  |  |  |  |
| 2023       | 58         | 17         | 29.3%   |  |  |  |  |  |  |
| 2024       | 51         | 17         | 33.3%   |  |  |  |  |  |  |

|          | OTH               | IER               |              |  |
|----------|-------------------|-------------------|--------------|--|
| Class of | Other<br>Received | Other<br>Elevated | %<br>Success |  |
| 1999     | 26                | 11                | 42.3%        |  |
| 2000     | 17                | 5                 | 29.4%        |  |
| 2001     | 11                | 6                 | 54.5%        |  |
| 2002     | 25                | 11                | 44.0%        |  |
| 2003     | 12                | 5                 | 41.7%        |  |
| 2004     | 19                | 6                 | 31.6%        |  |
| 2005     | 22                | 11                | 50.0%        |  |
| 2006     | 30                | 12                | 40.0%        |  |
| 2007     | 8                 | 3                 | 37.5%        |  |
| 2008     | 17                | 6                 | 35.3%        |  |
| 2009     | 15                | 5                 | 33.3%        |  |
| 2010     | 25                | 14                | 56.0%        |  |
| 2011     | 17                | 7                 | 41.2%        |  |
| 2012     | 12                | 5                 | 41.7%        |  |
| 2013     | 18                | 5                 | 27.8%        |  |
| 2014     | 16                | 11                | 68.8%        |  |
| 2015     | 13                | 3                 | 23.1%        |  |
| 2016     | 14                | 2                 | 14.3%        |  |
| 2017     | 14                | 5                 | 35.7%        |  |
| 2018     | 14                | 3                 | 21.4%        |  |
| 2019     | 14                | 2                 | 14.3%        |  |
| 2020     | 21                | 6                 | 28.6%        |  |
| 2021     | 13                | 8                 | 61.5%        |  |
| 2022     | 18                | 5                 | 27.8%        |  |
| 2023     | 19                | 9                 | 47.4%        |  |
| 2024     | 12                | 3                 | 25.0%        |  |



By Region Affiliation



|                                     | Evalua  | ted in 202 | 3 for Eleva | tion on 1 J | anuary 20  | 24          |            |        |
|-------------------------------------|---------|------------|-------------|-------------|------------|-------------|------------|--------|
| Total Voting Membership:            | 328,953 | •          |             |             |            |             |            |        |
| Number of Fellows                   | 8,426   |            |             |             |            |             |            |        |
| Total Nominations Received          | 949     | 11         |             |             |            |             |            |        |
| Total Nominees Elevated             | 323     |            |             |             |            |             |            |        |
| % success                           | 34.0%   |            |             |             |            |             |            |        |
|                                     |         | •          |             |             |            |             |            |        |
|                                     |         |            |             |             | % of Total | % of Total  | % of Total |        |
|                                     |         | Voting     | Nominations | Nominees    | Voting     | Nominations | Nominees   | %      |
|                                     |         | Membership | Received    | Elevated    | Membership | Received    | Elevated   | Succes |
| Regions 1-6 (U.S.)                  |         | 142,099    | 363         | 145         | 43.2%      | 38.3%       | 44.9%      | 39.9   |
| Region 7 (Canada)                   |         | 13,093     | 44          | 21          | 4.0%       | 13.6%       | 6.5%       | 47.7   |
| Region 8 (Europe, Mid East, Africa) |         | 59,450     | 191         | 61          | 18.1%      | 20.1%       | 18.9%      | 31.9   |
| Region 9 (Latin America)            |         | 10,188     | 11          | 2           | 3.1%       | 1.2%        | 0.6%       | 18.2   |
| Region 10 (Asia and Pacific)        |         | 102,967    | 340         | 94          | 31.3%      | 35.8%       | 29.1%      | 27.6   |
| Total                               |         | 327,797    | 949         | 323         | 99.6%      | 100.0%      | 100.0%     | 34.0   |



By Society/Council Affiliation

|                 |            |             |          | % of Total | % of Total  | % of Total |         |
|-----------------|------------|-------------|----------|------------|-------------|------------|---------|
|                 | Voting     | Nominations | Nominees | Voting     | Nominations | Nominees   | %       |
| Society/Council | Membership | Received    | Elevated | Membership | Received    | Elevated   | Success |
| AES             | 4,839      | 11          | 4        | 1.5%       | 1.2%        | 1.2%       | 36.49   |
| AP              | 9,149      | 36          | 7        | 2.8%       | 3.8%        | 2.2%       | 19.49   |
| BIO             | 0          | 3           | 1        | 0.0%       | 0.3%        | 0.3%       | 33.39   |
| BT              | 1,315      | 1           | 0        | 0.4%       | 0.1%        | 0.0%       | 0.09    |
| CAS             | 9,974      | 33          | 8        | 3.0%       | 3.5%        | 2.5%       | 24.29   |
| COMM            | 25,227     | 100         | 33       | 7.7%       | 10.5%       | 10.2%      | 33.09   |
| CIS             | 7,611      | 36          | 12       | 2.3%       | 3.8%        | 3.7%       | 33.39   |
| COMP            | 35,777     | 126         | 47       | 10.9%      | 13.3%       | 14.6%      | 37.39   |
| CTS             | 2,496      | 5           | 2        | 0.8%       | 0.5%        | 0.6%       | 40.09   |
| cs              | 8,119      | 37          | 14       | 2.5%       | 3.9%        | 4.3%       | 37.89   |
| CSC             | 0          | 6           | 2        | 0.0%       | 0.6%        | 0.6%       | 0.09    |
| CEDA            | 0          | 16          | 6        | 0.0%       | 1.7%        | 1.9%       | 37.59   |
| DEI             | 1,822      | 3           | 0        | 0.6%       | 0.3%        | 0.0%       | 0.09    |
| Educ            | 3,183      | 5           | 2        | 1.0%       | 0.5%        | 0.6%       | 40.09   |
| EMC             | 3,421      | 9           | 2        | 1.0%       | 0.9%        | 0.6%       | 22.29   |
| ED              | 9,296      | 33          | 10       | 2.8%       | 3.5%        | 3.1%       | 30.39   |
| EMB             | 8,677      | 26          | 11       | 2.6%       | 2.7%        | 3.4%       | 42.39   |
| EP              | 2,415      | 7           | 3        | 0.7%       | 0.7%        | 0.9%       | 42.99   |
| GRS             | 5,033      | 19          | 5        | 1.5%       | 2.0%        | 1.5%       | 26.39   |
| A               | 9,518      | 23          | 8        | 2.9%       | 2.4%        | 2.5%       | 34.89   |
| IE .            | 9,150      | 33          | 12       | 2.8%       | 3.5%        | 3.7%       | 36.49   |
| IM              | 3,588      | 4           | 2        | 1.1%       | 0.4%        | 0.6%       | 50.09   |



By Society/Council Affiliation

| Society/Council | Voting<br>Membership | Nominations<br>Received | Nominees<br>Elevated | % of Total<br>Voting<br>Membership |      | % of Total<br>Nominees<br>Elevated | %<br>Success |
|-----------------|----------------------|-------------------------|----------------------|------------------------------------|------|------------------------------------|--------------|
| T               | 3,372                | 9                       | 5                    | 1.0%                               | 0.9% | 1.5%                               | 55.69        |
| TS              | 2,351                | 4                       | 2                    | 0.7%                               | 0.4% | 0.6%                               | 0.09         |
| MAG             | 2,442                | 10                      | 5                    | 0.7%                               | 1.1% | 1.5%                               | 50.09        |
| MTT             | 10,682               | 28                      | 12                   | 3.2%                               | 3.0% | 3.7%                               | 42.9         |
| NANO            | 0                    | 10                      | 3                    | 0.0%                               | 1.1% | 0.9%                               | 30.09        |
| NPS             | 2,656                | 7                       | 2                    | 0.8%                               | 0.7% | 0.6%                               | 28.69        |
| DE              | 1,633                | 1                       | 0                    | 0.5%                               | 0.1% | 0.0%                               | 0.0          |
| PEL             | 9,864                | 19                      | 9                    | 3.0%                               | 2.0% | 2.8%                               | 47.4         |
| PE .            | 29,391               | 92                      | 29                   | 8.9%                               | 9.7% | 9.0%                               | 31.5         |
| PC              | 505                  | 0                       | 0                    | 0.2%                               | 0.0% | 0.0%                               | 0.0          |
| PHOT            | 6,291                | 37                      | 10                   | 1.9%                               | 3.9% | 3.1%                               | 27.0         |
| PSE             | 702                  | 1                       | 1                    | 0.2%                               | 0.1% | 0.3%                               | 0.0          |
| RFID            | 0                    | 0                       | 0                    | 0.0%                               | 0.0% | 0.0%                               | 0.0          |
| RL              | 1,522                | 3                       | 1                    | 0.5%                               | 0.3% | 0.3%                               | 33.3         |
| AS              | 11,807               | 24                      | 9                    | 3.6%                               | 2.5% | 2.8%                               | 37.5         |
| SEN             | 0                    | 10                      | 3                    | 0.0%                               | 1.1% | 0.9%                               | 30.0         |
| SP              | 15,595               | 56                      | 21                   | 4.7%                               | 5.9% | 6.5%                               | 37.5         |
| SIT             | 1,393                | 0                       | 0                    | 0.4%                               | 0.0% | 0.0%                               | 0.0          |
| SSC             | 10,218               | 17                      | 4                    | 3.1%                               | 1.8% | 1.2%                               | 23.5         |
| SMC             | 4,533                | 18                      | 5                    | 1.4%                               | 1.9% | 1.5%                               | 27.8         |
| SysC            | 0                    | 3                       | 0                    | 0.0%                               | 0.3% | 0.0%                               | 0.0          |
| ΓEM             | 2,330                | 1                       | 0                    | 0.7%                               | 0.1% | 0.0%                               | 0.0          |
| JFFC            | 2,014                | 4                       | 2                    | 0.6%                               | 0.4% | 0.6%                               | 50.0         |
| /T              | 5,764                | 23                      | 9                    | 1.8%                               | 2.4% | 2.8%                               | 39.1         |



Women Elevations

| Year Elevated | Total Nominations<br>Received | Women<br>Nominations<br>Received | Number of Women<br>Elevated | % Success |
|---------------|-------------------------------|----------------------------------|-----------------------------|-----------|
| 1999          | 566                           | 21                               | 13                          | 61.9%     |
| 2000          | 531                           | 6                                | 2                           | 33.3%     |
| 2001          | 525                           | 17                               | 5                           | 29.4%     |
| 2002          | 561                           | 28                               | 13                          | 46.4%     |
| 2003          | 629                           | 32                               | 14                          | 43.8%     |
| 2004          | 675                           | 36                               | 6                           | 16.7%     |
| 2005          | 778                           | 46                               | 17                          | 37.0%     |
| 2006          | 785                           | 44                               | 7                           | 15.9%     |
| 2007          | 765                           | 48                               | 18                          | 37.5%     |
| 2008          | 773                           | 47                               | 27                          | 57.4%     |
| 2009          | 757                           | 46                               | 19                          | 41.3%     |
| 2010          | 797                           | 57                               | 22                          | 38.6%     |
| 2011          | 813                           | 52                               | 29                          | 55.8%     |
| 2012          | 799                           | 52                               | 23                          | 44.2%     |
| 2013          | 831                           | 56                               | 19                          | 33.9%     |
| 2014          | 852                           | 61                               | 19                          | 31.1%     |
| 2015          | 874                           | 59                               | 26                          | 44.0%     |
| 2016          | 833                           | 60                               | 23                          | 38.0%     |
| 2017          | 944                           | 80                               | 28                          | 35.0%     |
| 2018          | 919                           | 75                               | 35                          | 46.7%     |
| 2019          | 914                           | 71                               | 23                          | 32.4%     |
| 2020          | 978                           | 93                               | 37                          | 39.8%     |
| 2021          | 936                           | 85                               | 39                          | 45.8%     |
| 2022          | 1029                          | 99                               | 35                          | 35.3%     |
| 2023          | 994                           | 100                              | 34                          | 34.0%     |
| 2024          | 949                           | 85                               | 33                          | 38.8%     |



