American Nuclear Society Mathematics and Computation Division (MCD)

Presentation to the

ANS Board of Directors

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MCD Mission

Division members promote the advancement of mathematical and computational methods for solving problems arising in all disciplines encompassed by the Society. They place particular emphasis on numerical techniques for efficient computer codes, the proper use of these codes, the preparation of computational benchmarks, and the development of standards for computing practices.
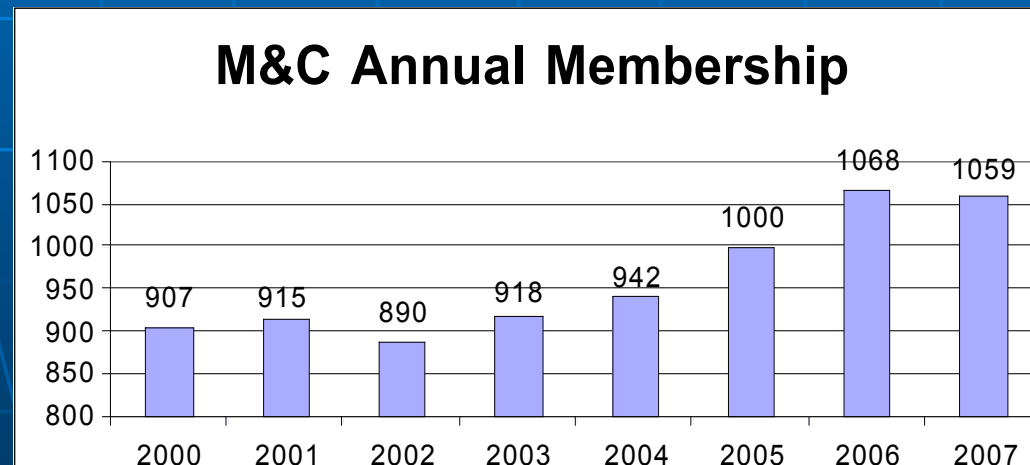
MCD Governance

- **Executive Committee Structure**
  - 4 Officers: Chair, Vice Chair, Secretary, Treasurer (Vice Chair automatically becomes Chair)
  - 10 Members (3-year terms)
  - 2 Ex Officio: past Chair, D. R. Hoffman
  - Board Liaison: M. R. Buckner

MCD Governance

- **Membership Trends Last 5 Years/Composition**
  - 20% of membership are students
  - ~10% of ANS members are members of MCD

M&C Annual Membership

Year	Members
2000	907
2001	915
2002	890
2003	918
2004	942
2005	1000
2006	1068
2007	1059

MCD Governance

■Budget

	2006	Through 9/2007
Carry Forward	14,388	13,646
Member Allocation	1,000	1,068
Division Income	600	6,722
Total Funds	**15,988**	**21,436**
Newsletters	42	0
Awards, Plaques	0	0
National Meeting Costs	0	0
Division Officer Expense	0	0
Student Support	2,300	2,900
Scholarship/NEED Funding	0	0
Other Expenses	0	0
Total Expenses	**2,342**	**2,900**
Excess	*13,646*	*18,536*

MCD Governance

- MCD Planning
  - Organize multiple sessions for the ANS Annual and Winter Meetings
  - Organize MCD topical meetings
    - MCD topicals in odd-numbered years
    - Include code workshops for professional development
  - Collaborate with other divisions
    - Reactor Physics Division (RPD) topicals in even-numbered years
    - Radiation Protection and Shielding Division (RPSD) topicals in even-numbered years
    - Along with the Biology and Medical Division support the activities of the Computational Medical Physics Working Group (CMPWG)
    - Along with RPD and RPSD support the activities of the Joint Benchmark Committee
  - Collaborate with the International Nuclear Community
    - MCD topical meeting is held outside North American every 6 years
    - Many non-US members, including officers
  - Attract young members to ANS and MCD
    - Provide funds for travel to ANS meetings and topicals
    - Support student conferences
    - Student paper awards at topicals

MCD Governance

- **Communications**
  - MCD website: http://mcd.ans.org
  - CMPWG website: http://cmpwg.ans.org
  - Newsletter:
    - Two per year
    - Hard copy mailed to members
    - Also posted on MCD website
  - Also use ANS email lists

MCD Contributions to ANS

- **ANS Position Statements**
  - MCD members, especially the members of the executive committee, standing committees, and officers have contributed to ANS position statements
- **Participation with Other Professional Societies**
  - Our members participate at SIAM, AAPM, ASTM and APS societies
  - Co-sponsorship of meetings, e.g., Supercomputing in Nuclear Applications (SNA), Monte Carlo (MC)
- **Society Leadership**
  - Our members serve on the ANS board and actively participate in many standing committees
- **Non-Meeting Publications**
  - Our members publish papers in Nuclear Science and Engineering, Nuclear Technology, Annals of Nuclear Energy, Progress in Nuclear Energy, Journal of Computational Physics, Journal of Medical Physics, TTSP, SIAM Journals, IEEE Journals, ASTM Journals

MCD Services to Membership

- Professional Development
  - Code workshops at national and topical meetings
  - Roundtable on "Current Issues in Computational Methods" at national meetings
- Scholarships
  - Dannels Scholarship awarded annually
- Peer Recognition/Awards
  - Pomraning Memorial (technical)
  - Distinguished Service
  - Distinguished Young Member
- Student Support
  - Provides travel funds to national and topical meetings
  - Support for Student Conference

MCD Meetings

- **National Meeting Participation**
  - Sessions at both meetings
    - 3-4 regular sessions
    - 1-2 special sessions
    - Co-sponsor 5-6 sessions
- **Topical Meetings**
  - Held in odd-numbered years
    - 2/3 are Class I, 1/3 are Class IV (International)
    - 2005: Avignon, France (Class IV)
    - 2007: Monterey, CA (Class I)
    - 2009: Saratoga Springs, NY (Class I)
  - In even-number years co-sponsor RPD and RPSD topicals
    - 2006: RPD – Vancouver, Canada; RPSD – Carlsbad, NM
    - 2008: RPD – Interlaken, Switz.; RPSD – Pine Mountain, GA

Summary

- ## MCD Metrics and Measures

Division Meetings	Division Governance	Division Contributions to Society	Division Services to Membership
National Meeting Participation 2006: 3 sessions 1 roundtable/7 sessions 0 roundtable	Succession Planning Included in 2004 Strategic Plan and in revised bylaws 2006	ANS Position Statements MCD is not responsible for any current position statements	Professional Development MCNPS workshop on parallel processing at 2003 topical
Class I Class II Topicals Monte Carlo 2004 179/204 M&C Avignon, IMCS 2005 204/390	Membership Trends 1,000/1068 membership + 6.8% change in 2006	Participation with Outside Professional Societies OECD expert benchmark group liaison activities	Scholarships Dannels Scholarship – have contributed $17k since 2004 to build fund. The Dannels Fund is close to being fully funded
Class III Topicals MCD does not support Embedded Topicals due to preference for, and success of, Class I and II topicals	Communications 2 newsletters in 2006 website updated in 2006	Society Leadership 2 of 4 PDC: 75% Exec Comm Presentation to BOD June 2006 Supports Comp Medical Physics Wrk Grp	Peer Recognition/ Awards Pomraning Award, Young Member Achievement Award, and Distinguished Service Award; nominates fellows & best paper/poster awards
	Division Planning 2004 Strategic Plan submitted to PDC Chair; Bylaws updated 2006	Non-Meeting Publications MCD provided papers to NS&E in 2006 (from M&C 2005 Avignon)	Student Support Annual & Winter Mtgs. 2006.

Summary

- **Areas of Success**
  - Organization of successful topical meetings
  - Increasing trends in number of members
  - Large student participation
  - Organization of code workshops at national and international meetings
  - Effective collaborations with international nuclear community
  - Formation of the Computational Medical Physics Working Group in collaboration with BMD

Summary

- **Focus for Future Action**
  - Continue our activities for attraction of young members and students
  - Continue our efforts to attract other societies into ANS; our current efforts on the Computational Medical Physics Group should help with attraction of AAPM members to ANS
  - Further develop new technical areas in which MCD members participate - e.g., computational materials, multiphysics
  - Continue our efforts in organization of quality meetings
  - Improve service to membership by exploring new approaches to roundtable session at national meetings and workshops at topical meetings