GRAEME DEWAR

1. Education

Simon Fraser University, Burnaby, B.C., Canada
Ph.D. (Physics), June 1980

Bishop's University, Lennoxville, Quebec, Canada
B.Sc. (Honours), June 1972
Major: Physics Minor: Mathematics

2. Professional Experience

University of North Dakota, Grand Forks ND

Position:	Physics Department Chair	2005-present
	Associate Professor	1989-present

University of Miami, Coral Gables FL

Positions:	Associate Professor	1985-1989
	Assistant Professor	1982-1985
	Visiting Assistant Professor	1981-1982

Airtron Division of Litton Industries, Morristown NJ

Position:	Consultant	1981-1982

Princeton University, Princeton NJ

Position:	Instructor	1977-1981

National Research Council of Canada, Ottawa, Ontario, Canada

Position:	Summer Student	1971, 1972

3. Courses Taught:

Regular Assignments

Course	Title	Term
Phys 161	Introductory College Physics I	Fall 2007
Phys 428$^{\alpha}$	Advanced Physics Laboratory	Fall 2007
Phys 110	Introductory Astronomy	Spring 2007
Phys 325L	Optics Laboratory	Spring 2007
Phys 211	College Physics I	Fall 2006
Phys 212/252	College/University Physics II	Summer 2006
Phys 432	Quantum Mechanics II	Spring 2006

$^{\alpha}$This a team taught course with my responsibility being 1/2 of the course.

Course	Title	Term
Phys 252	University Physics II	Fall 2005
Phys 428$^{\alpha}$	Advanced Physics Laboratory	Fall 2005
Phys 252	University Physics II	Summer 2005
Phys 162	Introductory College Physics II	Spring 2005
Phys 325	Optics	Spring 2005
Phys 325L	Optics Laboratory	Spring 2005
Phys 161	Introductory College Physics I	Fall 2004
Phys 325$^{\beta}$	Optics	Fall 2004
Phys 325L$^{\beta}$	Optics Laboratory	Fall 2004
Phys 542	Theory of Electricity & Magnetism	Spring 2004
Phys 130	Theory of Natural Science	Fall 2003
Phys 541	Theory of Electricity & Magnetism	Fall 2003
Phys 150	Physics for Aerospace Sciences	Spring 2003
Phys 325L	Optics Laboratory	Spring 2003
Phys 434	Nuclear Physics	Spring 2003
Phys 150	Physics for Aerospace Sciences	Fall 2002
Phys 325$^{\beta}$	Optics	Fall 2002
Phys 325L$^{\beta}$	Optics Laboratory	Fall 2002
Phys 150	Physics for Aerospace Sciences	Summer 2002
Phys 150	Physics for Aerospace Sciences	Spring 2002
Phys 150	Physics for Aerospace Sciences	Fall 2001
Phys 251$^{\gamma}$	University Physics I	Fall 2001
Phys 150	Physics for Aerospace Sciences	Summer 2001
Phys 150	Physics for Aerospace Sciences	Spring 2001
Phys 325$^{\beta}$	Optics	Spring 2001
Phys 325L$^{\beta}$	Optics Laboratory	Spring 2001
Phys 251$^{\gamma}$	University Physics I	Fall 2000
Phys 150	Physics for Aerospace Sciences	Summer 2000
Phys 150	Physics for Aerospace Sciences	Spring 2000
Phys 251	University Physics I	Spring 2000
Phys 150	Physics for Aerospace Sciences	Fall 1999
Phys 251$^{\gamma}$	University Physics I	Fall 1999
Phys 211	College Physics I	Summer 1999
Phys 325	Optics	Spring 1999
Phys 325L	Optics Laboratory	Spring 1999
Phys 208	General Physics	Fall 1998
Phys 327	Electricity and Magnetism	Fall 1998
Phys 203	General Physics	Summer 1998
Phys 325	Optics	Spring 1998
Phys 325L	Optics Laboratory	Spring 1998

$^{\alpha}$This a team taught course with my responsibility being 1/4 of the course.

$^{\beta}$These courses listed originally as PHYS 492 *Special Problems* with the then Chair, Prof. Tar-Pin Chen, as instructor of record.

$^{\gamma}$This is a course offered through Continuing Education to off-campus students.

Phys 171	Natural Science – Physics	Fall 1997
Phys 171L	Natural Science – Physics Lab	Fall 1997
Phys 205	General Physics	Fall 1997
Phys 203	General Physics	Summer 1997
Phys 325	Optics	Spring 1997
Phys 325L	Optics Laboratory	Spring 1997
Phys 327	Electricity and Magnetism	Fall 1996
Phys 203	General Physics	Summer 1996
Phys 206	General Physics	Summer 1996
Phys 206	General Physics	Spring 1996
Phys 318	Mechanics	Spring 1996
Phys 206	General Physics	Fall 1995
Phys 203	General Physics	Summer 1995
Phys 320	Elementary Solid State Physics	Spring 1995
Phys 328	Electricity and Magnetism	Spring 1995
Phys 327	Electricity and Magnetism	Fall 1994
Phys 428	Modern Physics Laboratory	Fall 1994
Phys 205	General Physics	Spring 1994
Phys 325L	Optics Laboratory	Spring 1994
Phys 205	General Physics	Fall 1993
Phys 205	General Physics	Spring 1993
Phys 328	Electricity and Magnetism	Spring 1993
Phys 206	General Physics	Fall 1992
Phys 327	Electricity and Magnetism	Fall 1992
Phys 206	General Physics	Summer 1992
Phys 205	General Physics	Spring 1992
Phys 320	Elementary Solid State Physics	Spring 1992
Phys 205	General Physics	Fall 1991
Phys 206	General Physics	Summer 1991
Phys 423	Astronomy	Spring 1991
Phys 431	Quantum Mechanics	Spring 1991
Phys 324	Thermal Physics	Fall 1990
Phys 423	Astronomy	Fall 1990
Phys 205	General Physics	Summer 1990
Phys 206	General Physics	Summer 1990
Phys 206	General Physics	Spring 1990
Phys 206	General Physics	Fall 1989

Advisees(Undergraduate)

- Michael Johnson: Research Experience for Undergraduates, Summer 2007
- Nathan Souther: Research Experience for Undergraduates, Summer 2006
- Samuel Pagel: Research Experience for Undergraduates, Summer 1999
- I am, and have been for about a decade, the department's advisor to all junior and senior Physics Majors. I currently advise 7 undergraduates.

Advisees(Graduate)

Name	Degree	Major Field	Graduation Date
Matthew Belobraydic	Ph.D.	Geology	
Jerry Brooks	M.S.	Physics	
Surendra Gautham	M.S.	Physics	
Erandi Gunapala	Ph.D	Physics	
Aranwela Hemantha	Ph.D	Physics	
Peter Reis	Ph.D	Physics	
Dean Smith	Ph.D	Physics	
Virginia Makepeace	M.S.	Space Studies	August, 2007
Ganagoda Hasitha	M.S.	Physics	August, 2006
Steven Rehn	M.S.	Physics	December, 2005
Medhi Ali	M.S.	Physics	August, 2005
Mustafa Rajabali	M.S.	Physics	August, 2005
Art Onwan	M.S.	Physics	August, 2000
Michael Swanson	Ph.D	Energy Engineering	August, 2000
Brian Moritz	Ph.D	Physics	May, 2000
Fumika Kiriyama	Ph.D	Physics	August, 1999
Blaise Mibeck	M.S.	Physics	May, 1999
Liqiang Tao	Ph.D	Physics	August, 1997
Emmanuel Vandyck	M.S.	Physics	August, 1996
Iver Fundan	M.S.	Physics	May, 1995
David Peitz	Ph.D	Chemistry	May, 1995
Shawn Stone	M.S.	Physics	May, 1995
Scott Nemmers	Ph.D	Physics	May, 1993
Semih Kumru	Ph.D	Physics	August, 1992
Glenn Mitzel	M.S.	Physics	May, 1992

Theses/Dissertations/Graduate Projects Directed

Name	Degree	Graduation Date
Phoumyphon Sourivong	Ph.D.	August, 1999
Scott Wadewitz	M.S.	August, 1994
Carlo Waldfried	M.S.	May, 1993

Graduate Committee Service

- Graduate School's Graduate Committee:
  - 1997 - 2001: member-at-large
- Physics Department's Graduate Committee:
  - 2005 - present: ex-officio member (as department chair)
  - 1992 - 2005: member in charge of assembling the department's Ph.D. qualifying examination and comprehensive examination.
  - 1989 - 1992: member

Curriculum Development Activities

- I developed the five credit course *Physics for Aerospace Sciences* (PHYS 150 & 150L) which was first offered in the fall of 1999. This is an introductory physics course which is unique in its scope and intensity. This course has been offered ever fall and spring semester, and every summer session except for 2006, since its inception. The class has 95 to 150 students each fall and spring.
- In the summer of 2007 I updated and re-wrote the laboratory manual which goes with the PHYSICS 150L course.

4. Institutional Service:

University

- Faculty Senate
  - 2005-2007: member-at-large
- Faculty Senate's Special Review Committee Pool
  - 2004-2005: member of one review committee
- Summer Sessions Committee
  - 2002-2003: chair
  - 2000-2002: member
- Graduate Committee
  - 1997-2000: member
- Outstanding Faculty Awards Committee
  - 1995-1997: member
- Library Committee
  - 1991-1992: chair
  - 1989-1991: member

College (A&S)

- Executive Committee of College Council
  - 2007-2008: member
- College Council
  - 2005-2008: member
- Undergraduate Program Review Committee: Theatre Arts
  - 2006-2007: member
- Tenure, Reappointment, and Promotion Committee
  - 1994-1997: member

Department

- Department Chair
  - 2005-present
- Physics Department's representative on Common Course Numbering Committee (a system wide committee)
  - 2006-present
- Assessment Committee
  - 2005-present (ex-officio)
- Course Committee
  - 1992-1995
- Direct Assessment of Teaching Committee
  - 2005-present (ex-officio)
- Graduate Committee
  - 2005-present (ex-officio)
  - 1989-2005
- Library Committee
  - 2005-present (ex-officio)
  - 1994-2995
  - 1990-1993
- Student Grievance Committee
  - 2005-present (ex-officio)
  - 2000-2004
- Undergraduate Committee
  - 2005-present (ex-officio)
- Ad hoc Bylaws Committee
  - 2006-2007 (ex-officio)
  - 2004-2005
- Ad hoc Introductory Laboratory Manager Committee
  - 2004-2005
- Ad hoc Strategic Plan Committee
  - 2007-2008 (ex-officio)

In addition to the above, I was the contact person for approximately half a dozen faculty searches over the period 1995-2006.

Other service

- I nominated Russell Lefevre, an alumnus of the Physics Department, for an honorary degree. This led to Dr. Lefevre receiving an honorary doctorate from UND at the May, 2007 graduation ceremony.
- I was optics advisor to the AGCAM group, headed by Doug Olsen of UND's Center for People & Environment, on a project to put a camera on the International Space Station.
  - 2002-2003

5. Publications:

Refereed (invited)

1. Graeme Dewar[+], *Minimization of losses in a structure having a negative index of refraction*, New. J. Phys. **7**, 161:1-11 (2005).
2. (book chapter) G. Dewar "Static and dynamic magnetoelasticity" in *Complex Mediums*, edited by Akhlesh Lakhtakia and Werner S. Weiglhofer, (SPIE, Bellingham WA 2003) 223-244.
3. G. Dewar[*], "Static and dynamic magnetoelasticity" in *Complex Mediums II*, edited by Akhlesh Lahtakia, Werner S. Weiglhofer, and Ian J. Hodgkinson, Proceedings of SPIE Vol. 4467 (SPIE, Bellingham WA 2001) 146-157.
4. G. Dewar[*], "Magnetostriction and Terfenol-D" in *Complex Mediums*, edited by Akhlesh Lahtakia, Werner S. Weiglhofer, and Russel F. Messier, Proceedings of SPIE Vol. 4097 (SPIE, Bellingham WA 2000) 134-144.

Refereed (contributed)

5. G. Dewar[*], "Strategies for minimizing losses in negative phase velocity metamaterials," in *Complex Photonic media*, edited by Graeme Dewar, Martin W. McCall. Mikhail N. Noginov, and Nikolay I. Zheludev, Proceedings of SPIE Vol. 6320 (SPIE, Bellingham WA 2006) 63200D:1-9 .
6. G. Dewar, *A thin wire array and magnetic host structure with* $n < 0$, J. Appl. Phys. **97** 10Q101:1-3 (2005).

[+] This is a refereed, electronic journal. My invited paper was downloaded 250 times within 16 days of publication, and by the end of January, 2006 it had been downloaded 960 times.

[*] In 2004 and earlier these papers were accepted or rejected based upon a review by the editors and/or the conference's Program Committee of the abstract of the paper. Only problematic papers, as judged by the editors, were subject to further review. In 2005 and 2006 all papers, as well as the abstracts, were fully peer reviewed.

7. G. Dewar*, "A negative index of refraction metamaterial based on a wire array embedded in a ferrite," in *Complex Mediums VI: Light and Complexity*, edited by Martin W. McCall, Graeme Dewar, and Mikhail Noginov, Proceedings of SPIE Vol. 5924 (SPIE, Bellingham WA 2005) 592409:1-7.

8. G. Dewar*, "Transverse electromagnetic waves in periodic wire arrays" in *Complex Mediums V: Light and Complexity*, edited by Martin W. McCall and Graeme Dewar, Proceedings of SPIE Vol. 5508 (SPIE, Bellingham WA 2004) 158-166.

9. G. Dewar*, "Negative phase velocity composites employing magnetic hosts," in Proceedings of SPIE Vol. 5218 *Complex Mediums IV: Beyond Linear Isotropic Dielectrics*, edited by Martin W. McCall and Graeme Dewar, (SPIE, Bellingham WA, 2003) 140-144.

10. G. Dewar*, "The applicability of ferrimagnetic hosts to nanostructured negative index of refraction (left-handed) materials" in *Complex Mediums III: Beyond Linear Isotropic Dielectrics*, edited by Akhlesh Lahtakia, Graeme Dewar, and Martin W. McCall, Proceedings of SPIE Vol. 4806, (SPIE, Bellingham WA 2002) 156-166.

11. G. Dewar, Samuel Pagel, and P. Sourivong, *Ferromagnetic Resonance in Terfenol-D at 17 GHz*, Int. J. Mod. Phys. B **15** 3266-3269 (2001).

12. G. Dewar, *Candidates for $\mu < 0$, $\epsilon < 0$ nanostructures*, Int. J. Mod. Phys. B **15** 3258-3265 (2001).

13. G. Dewar, *Effect of the large magnetostriction of Terfenol-D on microwave transmission*, J. Appl. Phys. **81**, 5713-5715 (1997).

14. Carlo Waldfried, Scott Wadewitz and G. Dewar, *A microwave transmission spectrometer*, J. Appl. Phys. **75**, 5919-5921 (1994).

15. G. Dewar, *Magnon decay and observed nonlinear microwave transmission phenomena*, Phys. Rev. **B45**, 2164-2166 (1992).

16. F. Carvajal and G. Dewar, *Temperature dependence of the transmission of gigahertz sound through Invar*, J. Appl. Phys. **67**, 4989-4991 (1990).

17. G. Dewar, *The Effect of the Entropy Wave on Sound and Electromagnetic Waves in Ferromagnetic Metals*, J. Appl. Phys. **64**, 5873-5875 (1988).

18. G. Dewar, *Electromagnetic Generation of Gigahertz Sound in Ferromagnetic Metals*, Phys. Rev. **B36**, 7805-7815 (1987).

19. R. Homer, G. C. Alexandrakis and G. Dewar, *Ultrasonic Attenuation in Nickel and Iron at 9.4 GHz*, J. Appl. Phys. **61**, 4133-4135 (1987).

20. G. Dewar and G. C. Alexandrakis, *Temperature Dependence of Electromagnetically Excited Sound in Single Crystals of Fe*, J. Appl. Phys. **57**, 3733-3735 (1985).

21. G. C. Alexandrakis and G. Dewar, *Electromagnetic Generation of 9.4 GHz Phonons in Fe and Ni*, J. Appl. Phys. **55**, 2467-2469 (1984).

22. G. Dewar and G. C. Alexandrakis, *Phonon Excitation and Propagation in Thick Iron Films*, J. Appl. Phys. **53**, 8116-8118 (1982).
23. G. Dewar, V. R. K. Murthy, M. Shone and R. Belt, *Measurement of Magnetization of YIG Films on Gadolinium-Gallium Garnet Substrates from Ferrimagnetic Resonance and Ferrimagnetic Antiresonance*, J. Appl. Phys. **53**, 2101-2103 (1982).
24. G. Dewar, B. Heinrich and J. F. Cochran, *Anomalous Transmission of Microwave Power at FMR through Nickel Crystals at 4.2 K*, J. Appl. Phys. **50**, 2437-2439 (1979).
25. J. F. Cochran, B. Heinrich and G. Dewar, *Apparatus for the Study of the Transmission of 24 GHz Radiation through Metal Plates and for the Study of FMR Absorption Lineshapes*, Can. J. Phys. **55**, 834-847 (1977).
26. G. Dewar, B. Heinrich and J. F. Cochran, *Ferromagnetic Antiresonance Transmission of 24 GHz Radiation through Nickel (20° to 364° C)*, Can. J. Phys. **55**, 821-833 (1977).
27. J. F. Cochran, B. Heinrich and G. Dewar, *Ferromagnetic Antiresonance Transmission through Supermalloy at 24 GHz*, Can. J. Phys. **55**, 787-805 (1977).
28. J. F. Cochran, B. Heinrich and G. Dewar, *Microwave Transmission and Absorption Measurements on Supermalloy*, Magnetism and Magnetic Materials (AIP Conf. Proc. No. 24) 509-511 (1974).
29. B. Heinrich, J. F. Cochran and G. Dewar, *Temperature Dependence of Antiresonance Transmission through Supermalloy at 24 GHz*, Proc. Int. Conf. on Magnetism ICM-73, 115-117 (1974).

Non-refereed

1. Graeme Dewar, *An $\epsilon < 0$, $\mu < 0$ structure using cladded wires within a ferrimagnetic host*, Bull. Am. Phys. Soc. **49**, 1069 (2004).
2. G. Dewar, Samuel Pagel, and P. Sourivong, *Ferromagnetic Resonance in Terfenol-D at 17 GHz*, Bull. Am. Phys. Soc. **45**, 653 (2000).
3. G. Dewar, laboratory manual for Physics 150/150L course, UND (1999).

Other Publications: as editor

1. Graeme Dewar, Martin W. McCall. Mikhail N. Noginov, and Nikolay I. Zheludev, editors, *Complex Photonic media*, Proceedings of SPIE Vol. 6320, (SPIE, Bellingham WA 2006), 218 pages.
2. Martin W. McCall, Graeme Dewar, and Mikhail Noginov, editors, *Complex Mediums VI: Light and Complexity*, Proceedings of SPIE Vol. 5924 (SPIE, Bellingham WA 2005), 298 pages.

3. Martin W. McCall and Graeme Dewar, editors, *Complex Mediums V: Light and Complexity*, Proceedings of SPIE Vol. 5508 (SPIE, Bellingham WA 2004), 292 pages.
4. Martin W. McCall and Graeme Dewar, editors, *Complex Mediums IV: Beyond Linear Isotropic Dielectrics*, Proceedings of SPIE Vol. 5218, (SPIE, Bellingham WA 2003), 276 pages.
5. Akhlesh Lakhtakia, Graeme Dewar, and Martin W. McCall, editors, *Complex Mediums III: Beyond Linear Isotropic Dielectrics*, Proceedings of SPIE Vol. 4807, (SPIE, Bellingham WA 2002), 338 pages.

Publications in progress

1. (invited) Martin W. McCall and Graeme Dewar, "Negative Refraction", a chapter to appear in *Tutorials in Complex Photonic Media*, edited by Graeme Dewar, Martin W. McCall, Mikhail A. Noginov, and Nikolay Zheludev, (SPIE, Bellingham WA). This chapter is currently under peer review.
2. Graeme Dewar, Martin W. McCall, Mikhail A. Noginov, and Nikolay Zheludev, editors, *Tutorials in Complex Photonic Media*, (SPIE, Bellingham WA), scheduled for publication in 2008.

6. Professional Presentations:

National/International

(Note: Abstracts of all presentations except #5, #10, and #13 had to pass a review by the conference's Program Committee before being accepted for presentation.)

1. G. Dewar, *Strategies for minimizing losses in negative phase velocity metamaterials*, SPIE's 51st Annual Meeting, San Diego, Aug. 13 - 17, 2006.
2. G. Dewar, *A negative index of refraction metamaterial based on a wire array embedded in ferrite*, SPIE's 50th Annual Meeting, San Diego, July 31 - Aug. 4, 2005.
3. G. Dewar, *A thin wire array and magnetic host* $n < 0$, 49th Annual Conference on Magnetism & Magnetic Materials, Jacksonville, FL, Nov. 7-11, 2004.
4. G. Dewar, *Transverse electromagnetic waves in periodic wire arrays*, SPIE's 49th Annual Meeting, Denver, Aug. 2 - 6, 2004.
5. G. Dewar, *An* $\epsilon < 0$, $\mu < 0$ *structure using cladded wires within a ferrimagnetic host*, American Physical Society's Annual March Meeting, Montreal, 2004.
6. G. Dewar, *Negative phase velocity composites employing magnetic hosts*, SPIE's 48th Annual Meeting, San Diego, Aug. 3 - 8, 2003.

7. G. Dewar, *The applicability of ferrimagnetic hosts to nanostructured negative index of refraction (left-handed) materials*, SPIE's 47th Annual Meeting, Seattle, July 7 - 11, 2002.
8. (invited) G. Dewar, *Static and dynamic magnetoelasticity*, SPIE's 46th Annual Meeting, San Diego, July 29 - Aug. 3, 2001.
9. (invited) G. Dewar, *Magnetostriction and Terfenol-D*, SPIE's 45th Annual Meeting, San Diego, July 30 - Aug. 4, 2000.
10. G. Dewar, Samuel Pagel, and P. Sourivong, *Ferromagnetic Resonance in Terfenol-D at 17 GHz*, American Physical Society's Annual March Meeting, Minneapolis, 2000.
11. G. Dewar, *Effect of the large magnetostriction of Terfenol-D on microwave transmission*, 41th Annual Conference on Magnetism and Magnetic Materials, Atlanta, November, 1996.
12. Carlo Waldfried, Scott Wadewitz and G. Dewar, *A new microwave transmission spectrometer*, 38th Annual Conference on Magnetism and Magnetic Materials, Minneapolis, 1993.
13. G. Dewar, *A Mechanism to Explain Observed Nonlinear Phenomena in Ferromagnetic Transmission Resonance*, Canadian Association of Physicists Congress, Winnipeg, 1991.
14. F. Carvajal and G. Dewar, *Temperature dependence of the transmission of sound and electromagnetic waves through Invar*, 34th Annual Conference on Magnetism and Magnetic Materials, Boston, 1989.
15. G. Dewar, *The Effect of the Entropy Wave on Sound and Electromagnetic Waves in Ferromagnetic Metals*, The 4th Joint Magnetism and Magnetic Materials - Intermag Conference, Vancouver, 1988.
16. R. Homer, G. C. Alexandrakis and G. Dewar, *Ultrasonic Attenuation in Nickel and Iron at 9.4 GHz*, 31th Annual Conference on Magnetism and Magnetic Materials, Baltimore, 1986.
17. G. Dewar and G. C. Alexandrakis, *Temperature Dependence of Electromagnetically Excited Sound in Single Crystals of Fe*, 30th Annual Conference on Magnetism and Magnetic Materials, San Diego, 1984.
18. G. C. Alexandrakis and G. Dewar, *Electromagnetic Generation of 9.4 GHz Phonons in Fe and Ni*, 29th Annual Conference on Magnetism and Magnetic Materials, Pittsburgh, 1983.
19. G. Dewar and G. C. Alexandrakis, *Phonon Excitation and Propagation in Thick Iron Films*, 3rd Joint Intermag - Magnetism and Magnetic Materials Conference, Montreal, 1982.

20. G. Dewar, V. R. K. Murthy, M. Shone and R. Belt, *Measurement of Magnetization of YIG Films on Gadolinium-Gallium Garnet Substrates from Ferrimagnetic Resonance and Ferrimagnetic Antiresonance*, 27th Annual Conference on Magnetism and Magnetic Materials, Atlanta, 1981.
21. G. Dewar, B. Heinrich and J. F. Cochran, *Anomalous Transmission of Microwave Power at FMR through Nickel Crystals at 4.2 K*, 24th Annual Conference on Magnetism and Magnetic Materials, Cleveland, 1978.
22. J. F. Cochran, B. Heinrich and G. Dewar, *Microwave Transmission and Absorption Measurements on Supermalloy*, 20th Annual Conference on Magnetism and Magnetic Materials, San Francisco, 1974.
23. B. Heinrich, J. F. Cochran and G. Dewar, *Temperature Dependence of Antiresonance Transmission through Supermalloy at 24 GHz*, International Conference on Magnetism, Moscow, 1973.

Regional Presentations

1. G. Dewar, *Candidates for $\mu < 0$, $\epsilon < 0$ nanostructures*, 48th Midwest Solid State and Solid State Theory Joint Conference, Grand Forks, Oct. 14-16, 2000.
2. G. Dewar, Samuel Pagel, and P. Sourivong, *Ferromagnetic Resonance in Terfenol-D at 17 GHz*, 48th Midwest Solid State and Solid State Theory Joint Conference, Grand Forks, Oct. 14-16, 2000.

State/Local Presentations

1. Nathan Souther and G. Dewar, *Microwave transmission and reflection characteristics of a photonic crystal exhibiting a negative permittivity*, UND, March 1, 2007.
2. G. Dewar, *Limitations on super-resolution imaging with photonic crystals exhibiting a negative index of refraction*, UND, Feb. 18, 2006.
3. G. Dewar, *Negative index of refraction (left-handed) mesostructures: New developments*, UND, Sept. 6, 2002.
4. G. Dewar, *The story of $\mu < 0$, $\epsilon < 0$ macrostructures: plenty of hype, wrong physics*, NDSU, Nov. 2, 2000.
5. G. Dewar, *The story of $\mu < 0$, $\epsilon < 0$ macrostructures: plenty of hype, wrong physics*, UND, Sept. 29, 2000.
6. G. Dewar, *Microwave properties of ferromagnetic metals, particularly Terfenol-D*, University of Minnesota, Duluth, Feb. 7, 2000.
7. G. Dewar, *Terfenol-D – An example of a smart material*, Physics Department, UND, Feb. 5, 1999.
8. G. Dewar, *Microwave Properties of Ferromagnetic Metals (Emphasis on Transmission Experiments)*, Physics Department, NDSU, September 22, 1993.

7. Grants and Contracts:

Submitted (requesting more than $10,000)

1. (pre-proposal) Elena Smeouchkina[1], Michael Lanagan[1], Akhlesh Lakhtakia[1], Venkat Gopalan[1], Vincent Harris[2], Hossein Mosallaei[2], and Graeme Dewar[3], *Low-Loss 3-D Negative Index Materials for RF to Optical Applications.* Request of the Department of Defense for $6,000,000 over five years with approximately $125,000 per year coming to UND. Submitted August, 2005.

   [1]The Pennsylvania State University

   [2]Northeastern University

   [3]University of North Dakota

2. G. Dewar, *Structured negative index of refraction materials for the microwave regimes.* I requested $18,759 from UND's Faculty Research Seed Money Council for the period Mar. 1, 2003 to Oct. 30, 2004. Submitted October, 2002.

3. G. Dewar, *Structured negative index of refraction materials for the microwave and infrared regimes.* Requested $629,136 from the Department of Defense's DEPSCoR program over three years. Submitted August, 2002.

4. T. Chen, D. Finnemore, and G. Dewar *High temperature layered superconductors as a compact source for tera-hertz electromagnetic radiation.* Requested $448,632 from Department of Energy's EPSCoR program over three years. Submitted April, 2002.

5. *Nanostructure of Insulators and Conductors.* I contributed to a proposal requesting from the federal government $10,000,000 per institution for seven institutions to form a consortium to work on nanostructured materials and devices. Submitted 2000.

6. Tar-Pin Chen, John L. Wagner, Graeme Dewar, and Jan W. Nowok, *Silicon Carbide Single Crystal and Epitaxial Thin Film Growth at Low Temperature.* Requested $466,642 from the Office of Naval Research over a period of two years. Submitted 1999.

7. G. Dewar, *High Frequency Magnetoelastic Properties of Terfenol-D.* Requested $172,057 from DoD EPSCoR for the period July 1, 1996 to June 30, 1999. Pre-proposal submitted July, 1995, and proposal submitted September, 1995.

8. T. Chen, B. Rao, J. Wagner, G. Lykken and G. Dewar, *Acquisition of an Auger Facility to Improve Upper Level Physics Laboratory and Project Courses and for the Initiated Applied Physics Program.* Requested $49,970 from NSF, primarily for equipment, for the period June 1, 1995 to May 31, 1997. Submitted November, 1994.

9. T. Chen and G. Dewar, *Finite size scaling study of Ni(111) on W(110) Surface – An ac susceptibility measurement.* Requested $184,844 from NSF for the period June 1, 1996 to May 31, 1999. Submitted October, 1994.

10. (pre-proposal) G. Dewar, *Investigation of the surface layer effects in microwave transmission through ferromagnetic metals.* This was a pre-proposal contributed to a joint UND-NDSU Physics Cluster proposal for NSF EPSCoR. Submitted 1994.

11. G. Dewar, *Microwave transmission through Terfenol-D: the role played by sound and spin waves.* Requested $86,806 from DoD for the period July 1, 1995 to June 30, 1997. Submitted May, 1994.

12. G. Dewar, *Investigation of the Radio-Frequency Acoustic Properties of Invar.* Requested $129,192 from DoD EPSCoR for the period July 1, 1994 to June 30, 1997. Submitted January, 1994.

13. G. Dewar, *Investigation of the radio frequency magnetic and magnetoelastic properties of Terfenol-D.* Requested $49,969 from NSF EPSCoR for the period July 1, 1993 to June 30, 1995. Submitted April, 1992 .

14. G. Dewar, *Investigation of the Radio Frequency Conductivity of High Temperature Superconductors.* Requested $173,825 for the period July 1, 1993 to June 30, 1996, in a pre-proposal to DOE EPSCoR. Submitted May, 1992.

15. I wrote the Physics Department's contribution to a joint UND/NDSU grant application to the Department of Energy titled: *Ph.D. Graduate Traineeships to Enhance Energy Research in the North Dakota Research Universities.* The Physics Department was to receive one graduate scholarship at $25,000 per year for five years. Submitted September, 1991.

16. G. Dewar, *Search for longitudinal magnetic excitations in Invar-like ferromagnets.* Requested $22,500 from Research Corporation for the period May 15, 1990 to Aug. 15, 1991. (UND was to supply matching funds of $47,400.) Submitted April, 1990.

17. G. Dewar, *Investigation of the Radio Frequency Conductivity of Single Crystals of High T_c Materials.* Requested $74,761 from NSF for the period Jan. 1, 1990 to Dec. 31, 1991. Submitted April, 1989.

Funded

1. G. Dewar, *Structured negative index of refraction materials for the microwave regimes.* I received $18,759 from the Faculty Research Seed Money Council for the period Mar. 1, 2003 to Oct. 30, 2004.

2. G. Dewar, *Investigation of the radio frequency magnetic and magnetoelastic properties of Terfenol-D*. I requested $49,969 from NSF EPSCoR for the period July 1, 1993 to June 30, 1995. I received $45,000 for this period.

8. Professional Associations:

- Member, American Physical Society (APS)
- Member, Society of Photo-Industrial Engineers (SPIE)

Offices Held: Chair of International Conferences

1. (with Martin W. McCall, Mikhail A. Noginov, Nikolay Zheludev) *Complex Photonic Media*, at SPIE's 51th Annual Meeting, San Diego, Aug. 13 - 17, 2006.
2. (with Martin W. McCall and Mikhail A. Noginov) *Complex Mediums VI: Light and Complexity*, at SPIE's 50th Annual Meeting, San Diego, July 31 - Aug. 5, 2005.
3. (with Martin W. McCall) *Complex Mediums V: Light and Complexity*, at SPIE's 49th Annual Meeting, Denver, Aug. 1 - 5, 2004.
4. (with Martin W. McCall) *Complex Mediums IV: Beyond Linear Isotropic Dielectrics*, at SPIE's 48th Annual Meeting, San Diego, Aug. 3 - 8, 2003.
5. (with Akhlesh Lakhtakia and Martin W. McCall) *Complex Mediums III: Beyond Linear Isotropic Dielectrics*, at SPIE's 47th Annual Meeting, Seattle, July 7 - 11, 2002.

Service to Professional Associations: Program Committee Membership

1. *Photonic Metamaterials* conference at SPIE's 52nd Annual Meeting (SPIE Optics + Photonics), San Diego, Aug. 26 - 30, 2007.
2. *Complex Mediums II: Beyond Linear Isotropic Dielectrics* conference at SPIE's 46th Annual Meeting, San Diego, July 29 - Aug. 3, 2001.

Service to Professional Associations: Chair of Conference Sessions

1. I chaired the session "Nanophotonics and Nanoplasmonics" at the *Complex Photonic Media* conference, San Diego, on Aug. 15, 2006.
2. I chaired the session "Propagation, Localization, and Scattering Phenomena" at the *Complex Photonic Media* conference, San Diego, on Aug. 15, 2006. (I replaced Allan Boardman.)
3. I chaired the session "Organic Photonic Materials" at the *Complex Media VI: Light and Complexity* conference, San Diego, on Aug. 2, 2005.

4. I chaired the session "High Frequency Microwave Devices" at the *Complex Mediums V: Light and Complexity* conference, Denver, on Aug. 4, 2004.
5. I chaired the "Inaugural Session" at the *Complex Mediums IV: Beyond Linear Isotropic Dielectrics* conference, San Diego, on Aug. 4, 2003.
6. I chaired the session "Sonoluminescesnc and Plasmons" at the *Complex Mediums III: Beyond Linear Isotropic Dielectrics* conference, Seattle, on July 8, 2002.
7. I chaired the session "Nonlinear Materials" at the *Complex Mediums II: Beyond Linear Isotropic Dielectrics* conference, San Diego, on Aug. 1, 2001.
8. I chaired the session "Nanoengineered Films and Materials II" at the *Complex Mediums* conference, San Diego, on Aug. 1, 2000.

Service to the Professional Community

- I serve as a referee for some SPIE publications as well as several U.S. and European professional journals.

Service to the Local Community

- I served as a science fair judge at the high school science fairs held at UND in 2000 through 2003.

9. Professional Education/Consultant Activities

Participation in Education Oriented Conferences

1. "Sixth Annual Conference on the Reform of Science and Mathematics Education" Bismarck, May 19-21, 2003.
2. "Science and Mathematics Conference" Bismarck, May 13-15, 2002.
3. "Science and Mathematics Conference" Bismarck, May 14-16, 2001.
4. "Reform of Undergraduate Science & Mathematics Education" Bismarck, May 15-17, 2000.
5. "Next Step", Fargo, July 28-31, 1999.
6. "Reforming Undergraduate Science and Mathematics Education Second Spring Conference", Bismarck, May 11-13, 1999.
7. "Reforming Undergraduate Science & Mathematics Education", Bismarck, May 11-13, 1998.
8. "Local Physics Alliances Project", Alexandria, Minnesota, Oct. 2-3, 1992.