NSERC CRSNG *Investing in people, discovery and innovation*
Investir dans les gens, la découverte et l'innovation

FORM 100
Personal Data Form
PART I

Date: 2006/8/2

Family name	Given name	Initial(s) of all given names	Personal identification no. (PIN)
KIEFL	Robert	F	16354

[X] I hold a full, an associate or an assistant professor position at a Canadian university

[ ] I hold an academic appointment at a Canadian university but am not a full, an associate or an assistant professor (complete Appendices B and C)

[ ] I hold a faculty position at an eligible Canadian college (complete Appendices B1 and C)

[ ] I do not or will not hold an academic appointment at a Canadian postsecondary institution

Place of employment other than a Canadian postsecondary institution (give address in Appendix A)

APPOINTMENT AT A POSTSECONDARY INSTITUTION

Title of position	Canadian postsecondary institution
Professor	British Columbia
Department	**Campus**
Physics and Astronomy	

ACADEMIC BACKGROUND

Degree	Name of discipline	Institution	Country	Date yyyy/mm
Bachelor's	Physics	Carleton	Canada	1976 / 08
Master's	Physics	British Columbia	Canada	1978 / 10
Doctorate	Physics	British Columbia	Canada	1982 / 01

TRAINING OF HIGHLY QUALIFIED PERSONNEL

Indicate the number of students, fellows and other research personnel that you:

	Currently		Over the past six years (excluding the current year)		
	Supervised	**Co-supervised**	**Supervised**	**Co-supervised**	**Total**
Undergraduate		2	1	6	9
Master's	2		1		3
Doctoral		2	3		5
Postdoctoral	1				1
Others			3		3
Total	3	4	8	6	21

Personal information collected on this form and appendices will be stored in the Personal Information Bank for the appropriate program.
PROTECTED WHEN COMPLETED

Version française disponible

Not Completed

Personal identification no. (PIN)	Family name
16354	KIEFL

ACADEMIC, RESEARCH AND INDUSTRIAL EXPERIENCE (use one additional page if necessary)

Position held (begin with current)	Organization	Department	Period (yyyy/mm to yyyy/mm)
Professor	British Columbia	Physics and Astronomy	1995/07
Associate Professor	University of British Cloumbia	Physics	1992/08 to 1995/08
Assistant Professor	University of British Columbia	Physics	1990/08 to 1992/08
University Research Fellow	University of British Columbia	Physics	1987/08 to 1990/08
Research Scientist	TRIUMF	Science Division	1984/10 to 1987/08

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Personal identification no. (PIN)	Family name
16354	KIEFL

RESEARCH SUPPORT

Family name and initial(s) of applicant	Title of proposal, funding source and program, and time commitment (hours/month)	Amount per year	Years of tenure (yyyy)

List all sources of support **(including NSERC grants and university start-up funds)** held as an applicant or a co-applicant: a) support held in the past four (4) years but now completed; b) support currently held, and c) support applied for. For group grants, indicate the percentage of the funding directly applicable to your research. Use additional pages as required.

a) Support held in the past 4 years

Kiefl R.F.	Muon Spin Rotation and beta-detected nuclear	77,175	1999
	magnetic resonance	77,175	2000
	NSERC	77,175	2001
	Operating Grant	77,175	2002
	100 hours/month	77,175	2003
Brewer, J.H., and others	Muon Spin Rotation Facility	256,800 (0%)	1999
	NSERC	256,800 (0%)	2000
	Major Facilities Access	256,800 (0%)	2001
	100 hours/month	256,800 (0%)	2002
		318,000 (0%)	2003
Gaulin, B. and others	Neutron Scattering at Chalk River	900,000 (0%)	2001
	NSERC	900,000 (0%)	2002
	MFA	900,000 (0%)	2003
	20 hours/month		

b) Support currently held

Bryman, D and others	Laboratory for Advanced Detector Development	3,250,000 (0%)	2003
	CFI	3,250,000 (0%)	2004
	10 hours/month	3,250,000 (0%)	2005

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RESEARCH SUPPORT

Family name and initial(s) of applicant	Title of proposal, funding source and program, and time commitment (hours/month)	Amount per year	Years of tenure (yyyy)

List all sources of support **(including NSERC grants and university start-up funds)** held as an applicant or a co-applicant: a) support held in the past four (4) years but now completed; b) support currently held, and c) support applied for. For group grants, indicate the percentage of the funding directly applicable to your research. Use additional pages as required.

b) Support currently held

P. Percival and others	TRIUMF Center for Molecular and Materials Research NSERC MFAIF 100 hours/month	350,000 (0%) 350,000 (0%)	2004 2005
R.F. Kiefl	Quantum materials studied with muon spin rotation and beta-NMR NSERC Discovery 100 hours/month	87,050 87,050 87,050 87,050 87,050	2004 2005 2006 2007 2008
D. Ryan and others	Chalk River Neutron Scattering Facility NSERC MFAIF 10 hours/month	1,000,000 (0%) 1,000,000 (0%) 1,000,000 (0%)	2004 2005 2006
R.F. Kiefl, W.A. MacFarlane, and K.H. Chow	Load Lock for beta-NMR NSERC RTI 100 hours/month	21,000	2005

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RESEARCH SUPPORT

Family name and initial(s) of applicant	Title of proposal, funding source and program, and time commitment (hours/month)	Amount per year	Years of tenure (yyyy)
List all sources of support **(including NSERC grants and university start-up funds)** held as an applicant or a co-applicant: a) support held in the past four (4) years but now completed; b) support currently held, and c) support applied for. For group grants, indicate the percentage of the funding directly applicable to your research. Use additional pages as required.			
b) Support currently held			
W.A. MacFarlane, R.F. Kiefl and K.H. Chow	RF Amplifier for beta-NMR NSERC RTI 100 hours/month	38,000(100%)	2006
c) Support applied for			
Percival and 10 others	TRIUMF Centre for Materials and Molecular Research NSERC MFAIF 150 hours/month	653,190 671,700 690,635	2006 2007 2008

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Canada

Highly Qualified Personnel (HQP)

Provide personal data about the HQP that you currently, or over the past six years, have supervised or co-supervised.

Personal identification no. (PIN)	Family name
16354	KIEFL

Name	Type of HQP Training and Status	Years Supervised or Co-supervised	Title of Project or Thesis	Present Position
Md. Hossein	Doctoral (In Progress)	Supervised 2006 -	Absolute Value Magnetic Penetration Depth in	UBC graduate student
Mike Smadella	Master's (In Progress)	Co-supervised 2006 -	Near Surface Structural Phase Transition in SrTiO3	Graduate Student UBC
A. Morrello	Postdoctoral (In Progress)	Co-supervised 2004 -	Quantum Tunneling in Molecular Magnets	UBC/TRIUMF Postdoc
Hassan Saadoui	Doctoral (In Progress)	Co-supervised 2004 -	Search for Broken Time Reversal Symmetry in Cuprates	UBC graduate student
D. Wong	Master's (In Progress)	Supervised 2003 - 2006	Vortices at the Surface of Superconductors with beta-NMR	UBC graduate student
Z. Salman	Postdoctoral (Completed)	Co-supervised 2002 - 2006	Beta Detected NMR and Muon Spin Rotation of Magnetism	TRIUMF PDF
J. Schultz	Undergraduate (Completed)	Co-supervised 2004 - 2005	Theory of beta-Detected Nuclear Quadrupole Resonance	UBC Law Student
Roger Miller	Postdoctoral (Completed)	Supervised 2004 - 2005	Magnetism and Superconductivity in Oxides	UBC technology transfer staff
T. Keeler	Master's (Completed)	Supervised 2003 - 2005	Ultra Thin Magnetic Films Probed with beta-NMR	UBC graduate student
T. Keeler	Undergraduate (Completed)	Co-supervised 2003 - 2003	Beta-NMR in Magnetic Multilayers	UBC graduate student
E. Reynard	Undergraduate (Completed)	Co-supervised 2002 - 2003	Beta Detected Nuclear Quadrupole Resonance	McGill University graduate student
W.A. MacFarlane	Res. Associate (Completed)	Supervised 2001 - 2002	Beta Detected NMR at ISAC	Assistant Prof. , Chemistry Department UBC
R. Miller	Doctoral (Completed)	Supervised 1997 - 2002	Relationship Between Magnetism and Superconductivity in YBCO	TRIUMF PDF
J. Chakhalian	Doctoral (Completed)	Supervised 1995 - 2002	Qunatum Impurities	PDF Max Planck Institute, Stuttgart
T. Beals	Undergraduate (Completed)	Supervised 2001 - 2001	Range Straggling of Low Energy 8Li	Graduate Student Caltech
K.H. Chow	Res. Associate (Completed)	Supervised 2000 - 2001	Beta-Detected NMR in Semiconductors	Associate Prof. , Physics Department , U. of Alberta
A. Price	Master's (Completed)	Supervised 1997 - 2001	Vortex State of LuNiBC Studied with Muon Spin Rotation	Ph.D Student , Universitaet Erlangen
G. Morris	Res. Associate (Completed)	Co-supervised 1997 - 2000	Development of Low Energy Beta Detected NMR	Research Associate at TRIUMF
S. Dunsiger	Doctoral (Completed)	Supervised 1992 - 2000	Spin Relaxation of Geometrically Frustrated Pyrochlores	PDF McMaster University

1. Most Significant Research Contributions in last 6 years-

1. Papers 6 and 8 describe the first use of β- detected nuclear magnetic resonance as a nanoscale probe in condensed matter. Subject of 16 invited symposium talks. These works open up a new way to probe the magnetic properties of quantum materials, their interfaces and finite size effects.
2. Papers 3 and 15 provide evidence for a connection between magnetism and superconductivity in the cuprate superconductors. Subject of invited talk at March meeting of the APS 2003. This was Roger Miller's Ph.D thesis.
3. Paper 20 is the first observation of the Kramer Pesch effect in the quantum limit. The observed reduction in the core radius due to de-occupation of bound states is smaller than predicted from theory. This was R. Miller's M.Sc. thesis.
4. Paper 9 describes first test of a truly isolated impurity (the muon) in a quantum spin ½ Heisenberg chain. This was part of the Ph.D. thesis of J. Chakhalian.
5. Paper 25 Using a combination of muon spin rotation, neutron scattering and magnetic susceptibility we identify for the first time a new kind of magnetic state called a cooperative paramagnet which remains dynamic down to temperatures well below the exchange energy. This is part of S. Dunsiger's Ph.D. thesis,

2. Papers in Refereed Journals

1. Z. Salman, R.F. Kiefl, K.H. Chow, M.D. Hossain, T.A. Keeler, S.R. Kreitzman, C.D.P. Levy, R.I. Miller, T.J. parolin, M.R. Pearson, H. Saadaoui, M. Smadella, D. Wang, W.A. MacFarlane, Phys.Rev. Letts**. 96**, 147601 (2006).
2. S. R Dunsiger, R.F. Kiefl, J.A. Chakhalian, J.E. Greedan, W.A. MacFarlane, R.I. Miller, G.D. Morris, A.N. Price, N.P. Raju, J.E. Sonier, Phys. Rev B, **73** 172418 (2006).
3. R.I. Miller, R.F. Kiefl, J.H. Brewer, J.E. Sonier, R. Liang D.A. Bonn, W. Hardy, Coexistence of Antiferrromagnetism and Superconductivity in $YBa_2Cu_3O_{6.35}$, Phys. Rev. B,**73**, 144509 (2006).
4. B.E. Schultz, K.H. Chow, B. Hitti, R.F. Kiefl, R.L. Lichti, S.F.J. Cox, Local Structure of Isolated Positively Charged Muonium in p-type GaAs, Phys. Rev Letts **95** 086404 (2005).
5. B.E. Schultz, K.H. Chow, B. Hitti, Z. Salman, S.R. Kreitzman, R.F. Kiefl, and R.L. Lichti, Nature of Charged Muonium in GaAs with an Electric Field, Phys. Rev. B , **72** 332001 (2005).
6. G.D. Morris, W.A. MacFarlane, K.H. Chow, R.F. Kiefl, S.R. Kreitzman, C.D.P. Levy, Z. Salman, et al, Depth Controlled Beta-Detected NMR of Low Energy ^{8}Li In a Silver Film, Phys. Rev. Letts. **73,** 157601 (2004).
7. J.E. Sonier, F.D. Callaghan, R.I. Miller, E. Boaknin, R. Kiefl, J.H. Brewer, Shrinking magnetic vortices in V_3Si due to delocalized quasiparticle core states: Confirmation of the microscopic theory of type-II superconductivity , Phys. Rev. Letts., **93**, 17002-1 (2004).
8. Z. Salman, E. Reynard, R.F. Kiefl, W.A. MacFarlane, K.H. Chow, S.R. Kreitzman, S. Daviel, C.D.P. Levy, R. Poutissou, β- Nuclear Quadrupole Resonance with Low Energy ^{8}Li, Phys. Rev. B. **70**, 104404 (2004).
9. J.A. Chakhalyian, R.F. Kiefl, et al. , Local Magnetic susceptibility of the Positive Muon in the Quasi 1D S=1/2 Antiferromagnet CPC, Phys. Rev. Letts. **91**, 027202 (2003).
10. J. A. Chakhalian, R. F. Kiefl, S. R. Dunsiger, W. A. MacFarlane, R. Miller, J. E. Sonier, and J. E. Fischer, Evidence for local moment formation around the positive muon in graphite, Phys. Rev. B **66**, 155107 (2002).
11. Ohishi, K. Kakuta, K., Akimitsu, J., Higemoto, W., Kadono, R., Sonier, J.E., Price, A.N., Miller, R.I., Kiefl, R.F., Nohara, M., Suzuki, H. and Takagi, H., Nonlocal Effects and Shrinkage of the Vortex Core Radius in YNi_2B_2C, Probed by μSR, Phys. Rev. B **65**, 140505 (2002).

12. Price, A.N., Miller, R.I., Kiefl, R.F., Chakhalian, J.A., Dunsiger, S.D., Morris, G.D., Sonier, J.E., Canfield, P.C., Anomalous Vortex State of Superconducting $LuNi_2B_2C$, Phys. Rev. B. **65** 214520 (2002).
13. Sonier, J.E., Brewer, J.H., Kiefl, R.F., Heffner, R.H., Poon, K., Stubbs, S.L., Morris, G.D., Miller, R.I., Hardy, W.N., Liang, R., Bonn, D., Gardner, J.S., Curro, N.J.,, Correlations Between Charge Ordering and Local Magnetic Fields in $YBa_2Cu_3O_{6+x}$, Phys. Rev. B. **66**, 134501-1 (2002).
14. Lumsden, M.D., Dunsiger, S.R., Sonier, J.E., Miller, R.I., Kiefl, R.F., Jin, R., He, J., Mandrus, D., Bramwell, S.T., Gardner, J.S., Temperature Dependence of the Magnetic Penetration Depth in the Vortex State of the Pyrochlore Superconductor $Cd_2Re_2O_7$, Phys. Rev. Letts. **89**, 147002-1 (2002).
15. Miller, R.I., Kiefl, R.F., Brewer, J.H., Sonier, Chakhalyian, J., Dunsiger, S.R., Morris, G.D., Price, A.N., Bonn, D.A., Hardy, W.N., Liang, R., Evidence for Antiferromagnetism in the Vortex Cores of Ortho-II $YBa_2Cu_3O_{6.50}$, Phys. Rev. Letts. **88**, 137002-1(2002).
16. Chow, K.H., Hitti, B., Kiefl, R.F., Lichti, R.L., Estle, T.L., Direct Observation of the Mu+-Zn-Reaction in GaAs, Phys. Rev. Letts.**87**, 216403-1 (2001).
17. Sonier, J.E., Brewer, J.H., Kiefl, R.F., Miller, R.I., Morris, G.D., Stronach, C.E., Gardner, J.S., Dunsiger, S.R., Bonn, D.A., Hardy, W.N., Liang, R., Anomalous Weak Magnetism in Superconducting $YBa_2Cu_3O_{6+x}$, Science **292**, 1692-1695, 2001.
18. Sonier, J.E., Brewer, J.H., Kiefl, R.F., Bonn, D., Chakhalian, J., Dunsiger, S.D., Hardy, W.N., Liang, R., MacFarlane, W.A., Miller, R.I., Noakes, D.R., Riseman, T.M., Stronach, C.E. Phys. Rev. B **61**, R890 (2000).
19. Dunsiger, S.R., Gardner, J.S., Chakhalian, J.A., Cornelius, A.L. , Jaime, M. Kiefl, R.F., Movshovich, R., MacFarlane, W.A., Miller, R.I., Sonier, J.E., and Gaulin, B.D., Low Temperature Spin Dynamics of the Geometrically Frustrated Antiferromagnetic Garnet $Gd_3Ga_5O_{12}$. Phys. Rev. Letts. **85**, 3504 (2000).
20. Miller, R.I., Kiefl, R.F., Brewer, J.H., Chakhalyian, J., Dunsiger, S., Morris, G.D., Sonier, J.E., MacFarlane, W.A., Low Temperature Limit of the Vortex Core Radius and the Kramer Pesch Effect in $NbSe_2$, Phys. Rev. Letts. **85**, 1540 (2000).
21. Chow, K.H., Kiefl, R.F. , Hitti, B. , Estle, T.L., Lichti, R.L., Novel Behaviour of Bond Centered Muonium in heavily Doped n-type Silicon: Curie-like Susceptibility and Charge Screening. Phys. Rev. Letts. **84**, 2251-2254 (2000).
22. Sonier, J.E., Brewer, J.H., Kiefl, R.F., Muon Spin Rotation Studies of the Vortex State in Type II Superconductors, Rev. Mod. Phys. **72**, 769-811 (2000).
23. Sonier, J., Kiefl, R.F., Brewer, J.H., Bonn, D., Dunsiger, S. Liang, R.X., Miller, R.I., Noakes, D.R. Stronach, C.E., Expansion of the Vortex cores in $YBa_2Cu_3O_{6.95}$ at Low Magnetic Fields, Phys. Rev. B, **59**, R729-R732 (1999).
24. Sonier, J.E. Brewer, J.H., Kiefl, R.F., Morris, G.M., Miller, R.I., Bonn, D.A., Chakhalyian, J., Heffner, R.H., Hardy, W.N., Liang, R., Field Induced Reduction of the Superfluid Density in $YBa_2Cu_3O_{6.95}$. Phys. Rev. Letts. **83**, 4156 (1999).
25. Gardner, J.S. Dunsiger, S.R., Gaulin, B.,Gingras, M.J.P., Greedan, J.E., Kiefl, R.F., Lumsden, M.D., MacFarlane, W.A., Raju, N.P., Sonier, J.E., Swainson, I., Tun, Z. Cooperative Paramagnetism in the Geometrically Frustrated Pyrochlore Antiferromagnet $Tb_2Ti_2O_7$, Phys. Rev. Letts. **82**, 1012-1015 (1999).

3. Papers in Refereed Conference Proceedings

26. R.I. Miller, R.F. Kiefl, J.H. Brewer, Z. Salman, J.E. Sonir, F. Callaghan, D.A. Bonn, W.N. Hardy, R. Liang, Coexistance of Antiferrromagnetism and Superconductivity in Single Crystal Underdoped YBa2Cu3O6+x, Physica B **374-375**, 215 (2006).

27. K.H. Chow, Z. Salman, W.A. MacFarlane, B. Campbell, T.A. Keeler, R.F. Kiefl, C.D.P. Levy, G.D. Morris, T.J. Parolin, R. Poutissou, Z. Yamani, Early $^{8}Li^{+}$ beta-NMR investigations in GaAs and Ge", Physica B **374-375**, 215 (2006).
28. R.I. Miller, Z. Salman, R.F. Kiefl, D. Arseneau, K.H. Chow, S. Daviel, M.D. Hossein, T. Keeler, S. Kreitzman, C.D.P. Levy, G.D. Morris, W.A. MacFarlane, T.J. Parolin, R. Poutissou, H. Saadaoui, D. Wang, J.Wei, P. Morales, $^{8}Li^{+}$ beta -NMR in Thin Films of $La_{0:67}Ca_{0:33}MnO_3$", Physica B **374-375** , 30 (2006).
29. T.A. Keeler, Z. Salman, K.H. Chow, B. Heinrich, M.D. Hossain, B. Kardasz, R.F. Kiefl, S.R.Kreitzman, W.A. MacFarlane, O. Mosendz, T.J. Parolin, D. Wang, Hyperfine Fields in a Ag/Fe Magnetic Multilayer Probed with Low Energy Spin Polarized $^{8}Li^{+}$ ", Physica B **374-375**, 79 (2006).
30. T.J. Parolin, Z. Salman, J. Chakhalian, D. Wang, T.A. Keeler, Md. Hossain, R.F. Kiefl, K.H. Chow, G.D. Morris, R.I. Miller, W.A. MacFarlane, $^{8}Li^{+}$ beta-NMR of Palladium Foil", Physica B **374-375**, 419 (2006)..
31. D. Wang, M.D. Hossain, Z. Salman, D. Arseneau, K.H. Chow, S.Daviel, T.A. Keeler, R.F. Kiefl, S.R. Kreitzman, C.D.P. Levy, G.D.Morris, R.I. Miller, W.A. MacFarlane, T.J. Parolin and H. Saadaoui, beta-Detected NMR of $^{8}Li^{+}$ in the Normal State of 2H-$NbSe_2$", Physica B **374-375**, 239 (2006).
32. Z. Salman, R.F. Kiefl, K.H. Chow, W.A. MacFarlane, S.R. Kreitzman,D.J. Arseneau, S. Daviel, C.D.P. Levy, Y. Maeno and R. Poutissou, beta-Detected NQR in Zero Field with a Low Energy Beam of $^{8}Li^{+}$ Physica B **374-375**, 468 (2006).
33. B.E. Schultz, I. Fan, B. Hitti, R.F. Kiefl, K.H. Chow, ZeroX: A technique for Studying Weak Dipolar Relaxations at CW Muon Facilities, $^{+}$ Physica B **374-375**, 464 (2006).
34. C.D.P. Levy, R. Baartman, J.A. Behr, A. Hatakeyama, A. Hirayama, H. Izumi, R.F. Kiefl, D. Melconian, G.D. Morris, R. Nussbaumer, M. Olivo, M. Pearson, R. Poutissou, and G.W. Wight, Polarized radioactive beam at ISAC , Proc. 14th Int. Conf. on Electromagnetic Isotope Separators and Techniques Related to Their Applications (EMIS-14), Victoria, May 6 –10, 2002, Nucl. Instrum. B **204**, 689 (2003).
35. C.D.P. Levy, R. Baartman, J.A. Behr, R.F. Kiefl, M. Pearson, R. Poutissou, A. Hatakeyama, Y. Hirayama, The collinear laser beam line at ISAC , Proc. Sixth Int. Conf. on Radioactive Nuclear Beams, Argonne, September 22 - 26, 2003, Nucl. Phys. **A746,** 206 (2004).
36. C.D.P. Levy, R. Baartman, K. Jayamanna, R. Kiefl, T. Kuo, M. Olivo, G.W. Wight, D.Yuan and A.N. Zelenski , A polarized beams project at ISAC, Proc. Fifth Int. Conf. on Radioactive Nuclear Beams, Divonne, France, April 3-8, 2000, Nucl. Phys. **A701**, 253c (2002).
37. K.L. Hoffman, et al. Fequency Shifts and Local Spin Susceptibility of Muonium in Heavily Doped Si and GaAs, Physica B **326**, 175-177 (2003)
38. R. F. Kiefl et al**,** Low Energy Spin Polarized Radioactive Beams as a Nanoscale Probe of Matter. Physica B **326**, 189-195 (2003).
39. T.R. Beals, R.F. Kiefl et al, Range Straggling of Low Energy ^{8}Li in Thin Films using β-NMR, Physica B **326,** 205-208 (2003).
40. W. A. MacFarlane, et al, Quadrupolar Split ^{8}Li β-NMR in $SrTiO_3$, Physica B **326**, 209-212 (2003).
41. W. A. MacFarlane et al, ^{8}Li β-NMR in Thin Metal Films, Physica B **326**, 213-216 (2003).
42. K.H. Chow, R.F. Kiefl et al, MULTI-New Detector, New Logic New Science, Physica B **326**, 279-282 (2003).
43. R. Miller , R.F. Kiefl et al, Penetration Depth and Core Radius μSR Measurements in the Vortex State Near the Lower Critical Field, Physica B **326**, 296-299 (2003).
44. J.E. Sonier, J.H. Brewer, R.F. Kiefl et al, Zero-Field μSR Study of $YBa_2Cu_3O_{6+x}$; Evidence for Charge Ordering, Physica B **326**, 312-315 (2003).

45. K. Ohishi et al , Anomalous Quasiparticle Excitations in $Y(Ni_{1-x}Pt_x)B_2C$, Physica B **326**, 364-368 (2003).
46. J. Chakhalian, R.F. Kiefl et al, Local Magnetic Susceptibility of the Positive Muon in the Quasi-1D S=1/2 Antiferromagnet $KCuF_3$, Physica B **326**, 422-426 (2003).
47. S.R. Dunsiger, R.F. Kiefl et al, A Comparison of the Local Magnetic Susceptibility in Rare Earth Pyrochlores , Physica B **326**, 475-479 (2003).
48. R.F. Kiefl, et.al. Complementarity of Low Energy Spin Polarized Radioactive Nuclei and Muons, Physica B, **289-290**, 640-647 (2000).
49. W.A. MaFarlane, R.F. Kiefl et.al. A μSR Study of Single Walled Carbon Nanotubes, Physica B, **289-290**, 589-593 (2000).
50. K. Ohishi et.al. Anomalous Field Dependence of the Vortex Core Radius and Magnetic Penetration Depth in YNi_2B_2C Probed by μSR, Physica B, **289-290**, 377-380 (2000).

5. Other Evidence of Impact and Contributions

- Served on TRIUMF OP-COM, 1995-1997
- Program Committee for ISAC Workshop, April 1997.
- Program Committee, μSR 99, Switzerland.
- Organizing Committee, TRIUMF ISAC Symposium Dec 1999
- Search Committee for New TRIUMF director,1999- 2000
- NSERC Grant Selection Committee GSC28, 2000-2003
- International Advisory Committee, Hyperfine Interactions Conference -12, 2001
- Chair Grant Selection Committee GSC28 2003.
- Chair Committee on Initial Appointments, Department of Physics UBC (2001-2004)
- Undergraduate Chair, UBC Physics and Astronomy 2005--

6. Invited Symposium Lectures (in last 6 years)

1. Application of Muon Spin Rotation in Condensed Matter, Plenary Lecture, American Physical Society Meeting, Vancouver, May 22 1999.
2. Condensed Matter Facility at ISAC, CAP Meeting, June 1999.
3. Complementarity of Spin Polarized Radioactive Nuclei and Muons, μSR99 Conference, Les Diablerets, Switzerland, August 1999.
4. μSR in Superconductors: Fullerenes, $NbSe_2$, and $YBa_2Cu_3O_x$. Annual meeting of the Electrochemical Society, Seattle, May 4, 1999.
5. β-NMR at ISAC, TRIUMF ISAC Scientific Symposium, December 1999.
6. Polarized Radioactive Nuclei Applied to Condensed Matter, Western Regional Nuclear Physics Conference, Feb. 2000.
7. Future Prospects in Condensed Matter Physics with Radioactive Ion Beams, Fifth International Conference of Radioactive Nuclear Beams, Divonne, April 2000.
8. Condensed Matter Physics Beyond the Standard Model, Astbury Symposium, April 15 (2000).
9. Applications of Polarized Radioactive Nuclei in Condensed Matter Physics, 2001 Particle Accelerator Conference, June (2001).
10. β- detected NMR, Workshop on Nuclear Orientation, TRIUMF, Aug. 2001
11. β-detected NMR at ISAC: A New Probe of Ultra Thin Structures, 14th International Conference on Electromagnetic Isotope Separators and Their Applications, Victoria, May 2002.
12. Low Energy Spin Polarized Radioactive Beams as a Nano-scale Probe of Matter, 9th International Conference on Muon Spin Rotation, Virginia June 2002.
13. Antiferromagnetism and Superconductivity in Ortho-II $YBa_2Cu_3O_{6+x}$ Studied with Muon Spin Rotation/Relaxation , March Meeting of the APS , 2003.

14. Low Energy Spin Polarized Radioactive Beams in Condensed Matter, CAP, June 2003.
15. Z. Salman and R.F. Kiefl, Low Energy Spin Polarized ^{8}Li and Its Applications In Condensed Matter Physics , VI International Workshop on Applications of Lasers in Atomic and Nuclear Research, Poznan, Poland, May 24 -27, 2004
16. β-Detected NMR and NQR Using Low Energy Polarized Radioactive Nuclei: A Novel probe of Thin Films and interfaces. International Conference on Hyperfine Interactions, Bonn, August 2004 .
17. Low Energy Polarized Radioactive Nuclei: Applications in Condensed Matter The Fourth International Conference on Exotic Nuclei and Atomic Masses (ENAM'04) Sept 2004.
18. Low Energy Polarized Radioactive Nuclei: A Local Probe of Electronic and Magnetic Properties of Thin films and Nanostructures. PACIFICHEM 2005 Dec. 2005.

7. Invited Lectures (in last 6 years)

1. Muon Spin Relaxation as a Probe of Frustrated Magnets, ITP University of California, Santa Barbara, November, 1999.
2. Spin Polarized Probes of Condensed Matter, UVIC, March 2000.
3. Low Energy Spin Polarized Radioactive Nuclei. A Near Surface Probe of Condensed Matter, National Superconducting Cyclotron Lab, MSU, Jan 2002.
4. Beta-Detected NMR at ISAC, NRC Review of TRIUMF, Sept. 2003.
5. Report on beta-NMR at ISAC ACOT meeting TRIUMF, May 2004

8. Academic Awards

1. NSERC University Research Fellow 1987-1990
2. Associate of Canadian Institute of Advanced Research (Superconductivity) 1990
3. Herzberg Medal from the Canadian Association of Physicists 1992
4. UBC Killam Research Prize 1993
5. UBC McDowell Medal, 1993
6. Fellow of the American Physical Society 2004

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SEND ONE ORIGINAL ONLY DO NOT PHOTOCOPY

APPENDIX A
Personal Data
(Form 100)

Complete this appendix (i) if you are an applicant or co-applicant applying for the first time; (ii) if you need to update information submitted with a previous application; or (iii) if you do not hold an appointment at a Canadian postsecondary institution. For updates, include only the revised information in addition to the date, your name and your PIN.

This information will be used by NSERC primarily to contact applicants and award holders. It may also be used to identify prospective reviewers and committee members, and to generate statistics. It will not be seen or used in the adjudication process.

Date: 2006/8/2

Family name	Given name	Initial(s) of all given names	Personal identification no. (PIN)
KIEFL	Robert	F	16354

Position and complete mailing address if your primary place of employment is not a Canadian postsecondary institution or if your current mailing address is temporary

6224 Agriculture Road

Vancouver BC V6T1Z1
CANADA

If address is temporary, indicate:

Starting date

Leaving date

Telephone number	Facsimile number	E-mail address
(604) 222-1047 7511	(604) 222-1074	Kiefl@physics.ubc.ca

Telephone number (alternate): (604) 822-3037

Give an alternate telephone number only if you can be reached at that number during business hours.

Gender (completion optional): [X] Male [ ] Female

LANGUAGE CAPABILITY

English	Read [X]	Write [X]	Speak [X]
French	Read [ ]	Write [ ]	Speak [ ]

I wish to receive my correspondence: in English [X] in French [ ]

AREA(S) OF EXPERTISE

Provide a maximum of 10 key words that describe your area(s) of expertise. Use commas to separate them. If you have expertise with particular instruments and techniques, specify which one(s).

muon spin rotation, superconductivity, magnetism, hydrogen in semiconductors, beta detected magnetic resonance, vortices, muonium, quantum diffusion, geometric frustration, exotic superconductors

Research subject code(s)

Primary: 3301

Secondary: 3305

Canada

Appendix D (Form 100)
Consent to Provide Limited Personal Information About Highly Qualified Personnel (HQP) to NSERC

NSERC applicants are required to describe their contributions to the training or supervision of highly qualified personnel (HQP) by providing certain details about the individuals they have trained or supervised during the six years prior to their current application. HQP information must be entered on the Personal Data Form (Form 100). This information includes the trainee's name, type of HQP training (e.g., undergraduate, master's, technical etc.) and status (completed, in-progress, incomplete), years supervised or co-supervised, title of the project or thesis, and the individual's present position.

Based on the federal *Privacy Act* rules governing the collection of personal information, applicants are asked to obtain consent from the individuals they have supervised before providing personal data about them to NSERC. In seeking this consent, the NSERC applicant must inform these individuals what data will be supplied, and assure them that it will only be used by NSERC for the purpose of assessing the applicant's contribution to HQP training. To reduce seeking consent for multiple applications, applicants will only need to seek consent one time for a six-year period. If the trainee provides consent by e-mail, the response must include confirmation that they have read and agree to the text of the consent form.

When consent cannot be obtained, applicants are asked to not provide names, or other combinations of data, that would identify those supervised. However, they may still provide the type of HQP training and status, years supervised or co-supervised, a general description of the project or thesis, and a general indication of the individual's present position if known.

An example of entering HQP information on Form 100 (with and without consent):

Name	Type of HQP Training and Status	Years Supervised or Co-supervised	Title of Project or Thesis	Present Position
Consent Received from Marie Roy				
Roy, Marie	Undergraduate (Completed)	Supervised 1994 - 1997	Isotope geochemistry in petroleum engineering	V-P (Research), Earth Analytics Inc., Calgary, Alberta
Consent Not Obtained from Marie Roy				
(name withheld)	Undergraduate (Completed)	Supervised 1994 - 1997	Isotope geochemistry	research executive in petroleum industry - western Canada

Consent Form

Name of Trainee

Applicant Information

Name KIEFL, Robert F

Department	Postsecondary Institution
Physics and Astronomy	British Columbia

I hereby allow the above-named applicant to include limited personal data about me in grant applications submitted for consideration to NSERC for the next six years. This limited data will only include my name, type of HQP training and status, years supervised or co-supervised, title of the project or thesis and, to the best of the applicant's knowledge, my position title and company or organization at the time the application is submitted. I understand that NSERC will protect this data in accordance with the *Privacy Act*, and that it will only be used in processes that assess the applicant's contributions to the training of highly qualified personnel (HQP), including confidential peer review.

_____ _____
Trainee's signature Date

Note: This form must be retained by the applicant and made available to NSERC upon request.