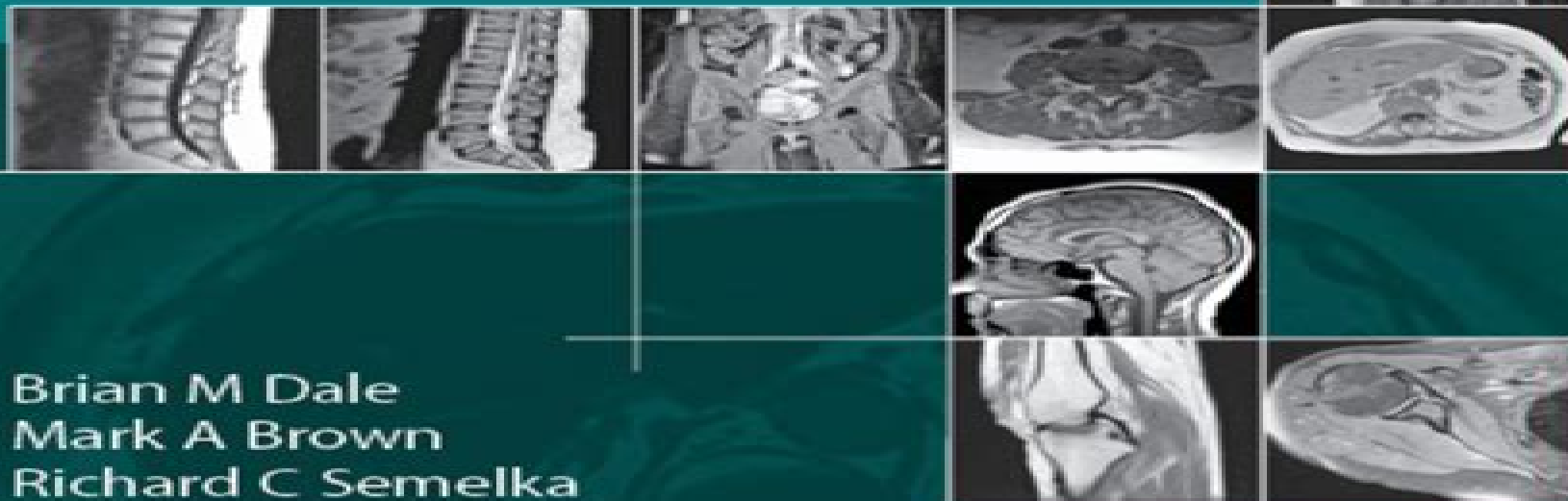


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Books In Print 2004-2005 Ed Bowker Staff, Staff Bowker, Ed, 2004 *Forthcoming Books* Rose Arny, 1999-04

Whitaker's Books in Print, 1998 *Current Index to Journals in Education*, 1999-10 **MRI Principles** Donald G.

Mitchell, 1999 This practical new resource provides clearly written easily readable explanations of complex MRI principles Instead of relying upon mathematical equations like other MRI references this book uses detailed line drawings and concise descriptions that can be understood by health professionals at all levels The Physics and Mathematics of MRI Richard

Ansorge, Martin Graves, 2016-11 Magnetic resonance imaging MRI is a very important clinical imaging tool It combines different fields of physics and engineering in a uniquely complex way This short book gives both an in depth account of the methods used for the operation and construction of modern MRI systems and also the principles of sequence design and many examples of applications An important additional feature of this book is the detailed discussion of the mathematical principles used in building optimal MRI systems and for sequence design **The Mathematics of Medical Imaging**

Timothy G. Feeman, 2010-03-10 In 1979 the Nobel Prize for Medicine and Physiology was awarded jointly to Allan McLeod Cormack and Godfrey Newbold Hounsfield the two pioneering scientists primarily responsible for the development in the 1960s and early 1970s of computerized axial tomography popularly known as the CAT or CT scan In his papers 13 Cormack then a Professor at Tufts University in Massachusetts developed certain mathematical algorithms that he envisioned could be used to create an image from X ray data Working completely independently of Cormack and at about the same time Hounsfield a research scientist at EMI Central Research Laboratories in the United Kingdom designed the first operational CT scanner as well as the first commercially available model See 22 and 23 Since 1980 the number of CT scans performed each year in the United States has risen from about 3 million to over 67 million What few people who have had CT scans probably realize is that the fundamental problem behind this procedure is essentially mathematical If we know the values of the integral of a two or three dimensional function along all possible cross sections then how can we reconstruct the function itself This particular example of what is known as an inverse problem was studied by Johann Radon an Austrian mathematician in the early part of the twentieth century **MRI** Brian M. Dale, Mark A. Brown, Richard C. Semelka, 2015-08-06 This fifth

edition of the most accessible introduction to MRI principles and applications from renowned teachers in the field provides an understandable yet comprehensive update Accessible introductory guide from renowned teachers in the field Provides a concise yet thorough introduction for MRI focusing on fundamental physics pulse sequences and clinical applications without presenting advanced math Takes a practical approach including up to date protocols and supports technical concepts with

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The Mathematics of Medical Imaging Timothy G. Feeman, 2015 The basic mathematics of computerized tomography the CT scan are aptly presented for an audience of undergraduates in mathematics and engineering Assuming no prior background in advanced mathematical analysis topics such as the Fourier transform sampling and discrete approximation algorithms are introduced from scratch and are developed within the context of medical imaging A chapter on magnetic resonance imaging focuses on manipulation of the Bloch equation the system of differential equations that is the foundation of this important technology Extending the ideas of the acclaimed first edition new material has been added to render an even more accessible textbook for course usage This edition includes new discussions of the Radon transform the Dirac delta function and its role in X ray imaging Kacmarz s method and least squares approximation spectral filtering and more Copious examples and exercises several new computer based exercises and additional graphics have been added to further delineate concepts The use of technology has been revamped throughout with the incorporation of the open source programming environment R to illustrate examples and composition of graphics All R code is available as extra source material on SpringerLink From the reviews of the first edition This book is valuable for it addresses with care and rigor the relevance of a variety of mathematical topics to a real world problem This book is well written It serves its purpose of focusing a variety of mathematical topics onto a real world application that is in its essence mathematics The Journal of Nuclear Medicine Vol 51 12 December 2010 This new book by Timothy Feeman truly intended to be a beginner s guide makes the subject accessible to undergraduates with a working knowledge of multivariable calculus and some experience with vectors and matrix methods author handles the material with clarity and grace The Mathematical Association of America February 2010 All theoretical material is illustrated with carefully selected examples which are easy to follow I highly recommend this interesting accessible to wide audience and well written book dealing with mathematical techniques that support recent ground breaking discoveries in biomedical technology both to students and to specialists Zentralblatt MATH Vol 1191 2010

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