



# Image-Guided Surgery: Fundamentals and Clinical Applications in Otolaryngology

By Robert F. Labadie, J. Michael Fitzpatrick

Download now

Read Online 

## Image-Guided Surgery: Fundamentals and Clinical Applications in Otolaryngology By Robert F. Labadie, J. Michael Fitzpatrick

Image-guided surgery (IGS) is the term used for surgical procedures in which the surgeon employs tracked surgical instruments with preoperative or intraoperative images in order to navigate during the procedure. It is part of the wider field of computer-assisted surgery. In the field of otolaryngology, IGS is primarily used by rhinologists during sinus surgery and by skull-base surgeons often in conjunction with neurosurgeons. While widely utilized, surgeons' understanding of the technology is often inadequate to appreciate its strengths and weaknesses. *Image-Guided Surgery: Fundamentals and Clinical Applications in Otolaryngology* was written to overcome this knowledge gap to educate practicing surgeons as well as provide an introduction to the field for engineers. Coauthored by a practicing otolaryngologist with a doctorate in bioengineering and a computer scientist with a doctorate in physics whose career has focused on error analysis in IGS, the book includes chapters on history, CT and MRI, tracking, registration, error analysis, evidence-based practices, FDA-cleared IGS systems, and future applications, as well as more than 90 full-color figures. The book also comes with a complimentary access to a PluralPlus companion website with videos and animations.

### Contents

Introduction

Acknowledgments

Chapter 1. Brief History of Image-Guided Surgery

Chapter 2. CT and MRI

Chapter 3. Tracking Systems

Chapter 4. Registration

Chapter 5. Error Analysis

Chapter 6. Best Practices for Use of IGS

Chapter 7. Surgical Systems

Chapter 8. What Does the Future Hold?

Index

**NOTE:** This book comes with supplementary content on a PluralPlus companion website. If you purchase or rent a used copy of the printed book, the code to access the website printed inside the book may have been previously redeemed/used or be incorrect and you will not be able to use it. To guarantee access to the website, it is recommended you purchase a new copy of this book

directly from Amazon or the publisher, Plural Publishing.

 [Download Image-Guided Surgery: Fundamentals and Clinical Ap ...pdf](#)

 [Read Online Image-Guided Surgery: Fundamentals and Clinical ...pdf](#)

# Image-Guided Surgery: Fundamentals and Clinical Applications in Otolaryngology

By Robert F. Labadie, J. Michael Fitzpatrick

**Image-Guided Surgery: Fundamentals and Clinical Applications in Otolaryngology** By Robert F. Labadie, J. Michael Fitzpatrick

Image-guided surgery (IGS) is the term used for surgical procedures in which the surgeon employs tracked surgical instruments with preoperative or intraoperative images in order to navigate during the procedure. It is part of the wider field of computer-assisted surgery. In the field of otolaryngology, IGS is primarily used by rhinologists during sinus surgery and by skull-base surgeons often in conjunction with neurosurgeons. While widely utilized, surgeons' understanding of the technology is often inadequate to appreciate its strengths and weaknesses.

*Image-Guided Surgery: Fundamentals and Clinical Applications in Otolaryngology* was written to overcome this knowledge gap to educate practicing surgeons as well as provide an introduction to the field for engineers. Coauthored by a practicing otolaryngologist with a doctorate in bioengineering and a computer scientist with a doctorate in physics whose career has focused on error analysis in IGS, the book includes chapters on history, CT and MRI, tracking, registration, error analysis, evidence-based practices, FDA-cleared IGS systems, and future applications, as well as more than 90 full-color figures.

The book also comes with a complimentary access to a PluralPlus companion website with videos and animations.

## Contents

Introduction

Acknowledgments

Chapter 1. Brief History of Image-Guided Surgery

Chapter 2. CT and MRI

Chapter 3. Tracking Systems

Chapter 4. Registration

Chapter 5. Error Analysis

Chapter 6. Best Practices for Use of IGS

Chapter 7. Surgical Systems

Chapter 8. What Does the Future Hold?

Index

**NOTE:** This book comes with supplementary content on a PluralPlus companion website. If you purchase or rent a used copy of the printed book, the code to access the website printed inside the book may have been previously redeemed/used or be incorrect and you will not be able to use it. To guarantee access to the website, it is recommended you purchase a new copy of this book directly from Amazon or the publisher, Plural Publishing.

**Image-Guided Surgery: Fundamentals and Clinical Applications in Otolaryngology** By Robert F. Labadie, J. Michael Fitzpatrick **Bibliography**

- Rank: #4214338 in Books
- Published on: 2016-04-30
- Original language: English

- Dimensions: 10.25" h x 7.25" w x .75" l,
- Binding: Hardcover
- 232 pages

 [Download Image-Guided Surgery: Fundamentals and Clinical Ap ...pdf](#)

 [Read Online Image-Guided Surgery: Fundamentals and Clinical ...pdf](#)

## Download and Read Free Online Image-Guided Surgery: Fundamentals and Clinical Applications in Otolaryngology By Robert F. Labadie, J. Michael Fitzpatrick

---

### Editorial Review

#### Review

*"It taught me a lot about a highly complex subject that, to be honest, I thought would be way out of my league. At the end of each chapter I was able to say, "Wow, now I understand that!" Even better was that I was able to impart this knowledge to others, demonstrating that the learning was active." -- --Mark Wax, MD, Oregon Health and Science University*

*"I found it very well written and exhaustive in its analysis... The chapters are well defined and flow appropriately for the topic, maintaining their focus throughout." -- --Sanford Archer, MD, University of Kentucky*

#### About the Author

**Robert F. Labadie, MD, PhD**, a native of Pittsburgh, Pennsylvania, earned his bachelor of science in mechanical engineering from the University of Notre Dame, his doctor of medicine and a doctorate in bioengineering from the University of Pittsburgh, and completed his residency training at UNC-Chapel Hill. He joined the faculty at Vanderbilt University Medical Center in 2001 and completed a master's of management in health care in 2013.

**J. Michael Fitzpatrick, PhD**, is professor emeritus of computer science, electrical engineering, computer engineering, radiology, and neurosurgery at Vanderbilt University, where he has served as a member of the faculty since 1982. He is an SPIE fellow and an IEEE fellow, an advisory-board member of the Journal of Medical Imaging, and served for four years as chair of the Image Processing Conference at the annual SPIE International Medical Imaging Symposium.

### Users Review

#### From reader reviews:

##### Mary Ponce:

The book Image-Guided Surgery: Fundamentals and Clinical Applications in Otolaryngology give you a sense of feeling enjoy for your spare time. You may use to make your capable much more increase. Book can to be your best friend when you getting strain or having big problem along with your subject. If you can make reading through a book Image-Guided Surgery: Fundamentals and Clinical Applications in Otolaryngology being your habit, you can get more advantages, like add your current capable, increase your knowledge about many or all subjects. You could know everything if you like open up and read a guide Image-Guided Surgery: Fundamentals and Clinical Applications in Otolaryngology. Kinds of book are several. It means that, science reserve or encyclopedia or other people. So , how do you think about this guide?

##### Arthur Pineda:

Exactly why? Because this Image-Guided Surgery: Fundamentals and Clinical Applications in Otolaryngology is an unordinary book that the inside of the e-book waiting for you to snap that but latter it will distress you with the secret this inside. Reading this book beside it was fantastic author who else write the book in such wonderful way makes the content within easier to understand, entertaining method but still

convey the meaning thoroughly. So , it is good for you for not hesitating having this any more or you going to regret it. This phenomenal book will give you a lot of positive aspects than the other book include such as help improving your proficiency and your critical thinking technique. So , still want to hesitate having that book? If I had been you I will go to the reserve store hurriedly.

**Angela Thomas:**

As we know that book is significant thing to add our expertise for everything. By a book we can know everything we want. A book is a list of written, printed, illustrated or maybe blank sheet. Every year seemed to be exactly added. This book Image-Guided Surgery: Fundamentals and Clinical Applications in Otolaryngology was filled with regards to science. Spend your free time to add your knowledge about your scientific disciplines competence. Some people has various feel when they reading any book. If you know how big benefit from a book, you can experience enjoy to read a e-book. In the modern era like today, many ways to get book which you wanted.

**Laura Burnham:**

Some individuals said that they feel uninterested when they reading a guide. They are directly felt the item when they get a half regions of the book. You can choose often the book Image-Guided Surgery: Fundamentals and Clinical Applications in Otolaryngology to make your personal reading is interesting. Your own personal skill of reading expertise is developing when you similar to reading. Try to choose straightforward book to make you enjoy you just read it and mingle the opinion about book and examining especially. It is to be initial opinion for you to like to available a book and read it. Beside that the guide Image-Guided Surgery: Fundamentals and Clinical Applications in Otolaryngology can to be your brand new friend when you're sense alone and confuse using what must you're doing of these time.

**Download and Read Online Image-Guided Surgery: Fundamentals and Clinical Applications in Otolaryngology By Robert F. Labadie, J. Michael Fitzpatrick #HXTUR0CQEK2**

# **Read Image-Guided Surgery: Fundamentals and Clinical Applications in Otolaryngology By Robert F. Labadie, J. Michael Fitzpatrick for online ebook**

Image-Guided Surgery: Fundamentals and Clinical Applications in Otolaryngology By Robert F. Labadie, J. Michael Fitzpatrick Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Image-Guided Surgery: Fundamentals and Clinical Applications in Otolaryngology By Robert F. Labadie, J. Michael Fitzpatrick books to read online.

## **Online Image-Guided Surgery: Fundamentals and Clinical Applications in Otolaryngology By Robert F. Labadie, J. Michael Fitzpatrick ebook PDF download**

**Image-Guided Surgery: Fundamentals and Clinical Applications in Otolaryngology By Robert F. Labadie, J. Michael Fitzpatrick Doc**

**Image-Guided Surgery: Fundamentals and Clinical Applications in Otolaryngology By Robert F. Labadie, J. Michael Fitzpatrick Mobipocket**

**Image-Guided Surgery: Fundamentals and Clinical Applications in Otolaryngology By Robert F. Labadie, J. Michael Fitzpatrick EPub**