Developing a Talent for Science, by Ritsert C. Jansen, ISBN 9780521149617, Cambridge, 184 pages, £ 16.99.

This insightful book offers guidance toward an enhanced productive academic or professional scientific career. To achieve this, *Developing a Talent for Science* places a strong emphasis on the mutual benefits gained both in learning from others and in helping others maximize their individual skills. The book contains a wealth of practical advice, often supported by real-life anecdotes and thought-provoking questions. Its self-reflective exercises demand a high level of self analysis and will likely uncover opportunities to address weaknesses in the reader's own professional environment and behavior. If you are open to change, then *Developing a Talent for Science* can be a true life-changing guide to a richer and more satisfying professional evolution.

The author heads the Groningen Bioinformatics Centre and is also amply supported by an impressive resume, including his membership in the Health Council of the Netherlands. His book incorporates elements from his experiences teaching workshops and classes on talent and academic skills development. The target audience is the scientific community ranging from the novice level (student) to the more established level (full professor or research director in a large corporation). In addition, much of the material is equally applicable to many occupational fields. The book's five chapters exhibit his highly disciplined and structured approach. The concisely titled (five words or less) chapters are grouped in short subchapters with simple single-word titles. Subchapters contain exercises and anecdotes, often with catchy titles ("It's not simple to achieve simplicity", "Resume resumed", "Grant-parents"), creating a captivating refreshing reading experience.

The first chapter describes how a scientist or a scientist-to-be could improve natural talents by honing essential personal skills such as perseverance and communication, while being driven by the fundamental passion for science ("science is fun and you get paid to play"). Using techniques from the book, the individual learns both to access and maintain the strong creative flow during hard times and how to protect the passionate interest by prioritizing ("saying YES to someone else can be saying NO to yourself"). Jansen suggests that viewing problems as challenges can create feelings of euphoria when they are solved, or teach useful lessons when they are not met. Being a good scientist requires excellent communication skills achieved only through dedicated practice. Are you ready to give a two-minute elevator speech about your research during a shared elevator ride with your boss?

The second chapter focuses on synergy and how others can make the individual a better scientist. The subchapter on "reading" is full of practical suggestion on how to find and filter relevant scientific information in the digital age. For more personal interactions, Jansen suggests listening with an open mind and to always be aware of the interpreter inside each individual. For example, he recommends taking a more active role in a conference setting by asking relevant questions. In this setting, timidity is less successful than asking questions that may appear "stupid" at the time, but which eventually lead to better progress. Communication by definition cannot by unidirectional; thus it is critical to openly invite review of one's work. Clear guidelines for respectfully sharing information can create mutually beneficial and enriching collaboration instead of competition. The second chapter concludes with an unexpected recommendation to consider changing jobs as an effective means of improving one's career.

The next topic in the book is the acceleration of development of an individual's talent by creating the right conditions in a first-class educational or professional setting which is structured to attract new talent. The discussion on the five phases of a team's life span is also enlightening. Actively identifying a team's life cycle can help understand the tensions and options available to the project. The subchapters on how to reward and support scientific staff are a must-read for mentors, team leaders and bosses ("from fire to inspire").

Chapter 4 discusses how to put the material in the previous chapters into practice. Although the course of the book lays out the underlying strategies, the author emphasizes the need for deliberate practice and ongoing execution of the newly acquired goals. He acknowledges that the efforts will be anything but easy (they make you hurt, but they do work). Others have succeeded (which is some consolation), as frequent quotes from giants such as Goethe ("A really great talent finds its happiness in execution") and Einstein ("I have no special talent, I am only passionately curious") remind the reader. Eventually a highly motivated individual is ready to self-analyze, "Have I done the necessary homework and set a substantial groundwork for a successful career? Is my CV updated and easy to read within a minute or two? Am I honestly aware of my current weaknesses and am I truly striving to improve them?" This and the following chapter give the interested individual important information to take control of the momentum in the form of general advice and worksheets, including a novel spider web diagram that encapsulates self assessments. A series of appealing examples of real-life situations show "how you can get your act together" and tackle many of the anticipated hurdles.

There are few and only minor issues to criticize in this text. For one, the reader is not alone if the book's title gave the erroneous expectation that it was a teaching guide for science education or a discussion on the origin of talent and aptitude. In fact, the latter topic has been interestingly addressed (see, for example "Talent is overrated" by Geoff Colvin) but is not touched on in Jansen's book. In addition, there is some level of repetition in the book, as evident by frequent cross-referencing. Also, several tables and figures appear to be slightly out-of-context and would benefit from a more thorough analysis of their content.

Finally, the best way to summarize this superb publication is to use the author's own words: "... this book aims to give you ideas rather than to be comprehensive. It will plant seeds in your mind, although the watering, nourishing, weeding, and final harvesting are up to you."

In my opinion, *Developing a Talent for Science* is a must-read for any professional in the geophysical community and for those pursuing studies in this field.

—*Andreas Rueger*
Highlands Ranch, USA

Essential Image Processing and GIS for Remote Sensing, by Jian Guo Liu, and Phillipa J. Mason, ISBN 978-0-470-51032-2, Wylie-Blackwell, 460 pages, US $159.95.

As in seismic interpretation, users of remote imagery cannot be fully informed without understanding how their data are modified and affected during collection and processing.

An advanced text complete with end-of-chapter questions, *Essential Image Processing* is heavily mathematical, yet its ideas and concepts are still accessible without revisiting one's college math texts. The entire book deals with digital images, the kind most likely to be encountered by a present day practitioner. Chapters 19 through 22 should prove especially valuable to anyone using, or interested in this type of data.

In chapter 19 the reader is introduced to a basic approach for data processing and the creation of thematic images. The balance of the chapters, 20 through 22, present well done and interesting case studies. Even the casual user of thematic imagery would benefit from time spent in these chapters.

The book takes a highly mathematical approach to digital images, treating them as an array of data points. This starts by expressing color at each sample point as a vector quantity in a three-dimensional (red, green, blue) space. Chapter 2 deals with processes applied to a single image, such as contrast enhancement. The next chapter logically extends the discussion to multi-image processes such as adding images and, creating indices for iron oxide, vegetation and clay. Chapter 4's filtering discussion will be familiar to those with knowledge of seismic processing because, the math, such as fast Fourier transforms is the same. Image fusion, component analysis and image classification are the subjects of the next several chapters while the chapter on correcting images for geometric factors is especially thorough. Included is an excellent treatment of Synthetic Aperture RADAR imagery.

The second section of the book is a thorough treatment of GIS data reduction and correction and introduces fuzzy data sets, fuzzy logic and fuzzy modeling. For those not familiar with the ideas of fuzziness, chapters 17 and 18 will be a bit of a slog, but well worth the time.

Although written by practitioners of English, spellings like colour pass almost unnoticed. As usual with textbooks, the binding has the pages glued but seems good quality. There is an abundance of color images and clear monochromatic graphs. In general, *Essential Image Processing* would be an excellent resource for thematic image users. This book will allow interpreters to approach their work with a wider and deeper understanding of what has happened to imagery before it lands on their desk or computer.

—*Robert W. Avakian*,
Okmulgee, USA