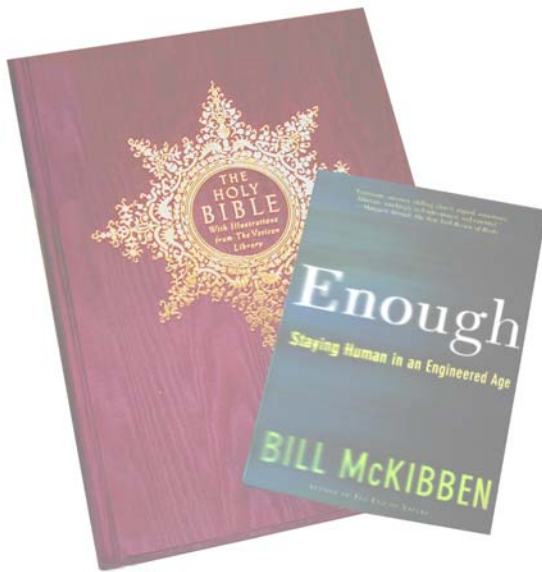


# *Study Guide for “Enough”*

**Enough: Staying Human in an Engineered Age**

*National Council of the Churches of Christ in the USA*



## HUMAN GENETICS AND PROGRESS

### **Faithfully Engaging Science, The Possible and the Limits of Human Progress**

- *For use in congregational study*
- *For personal reflection*
- *Synopsis of each chapter*
- *Discussion Questions*
- *Other resources*



*The NCCUSA is the nation's largest ecumenical agency and is comprised of 36 Protestant, Orthodox and Anglican national churches with constituent membership in excess of 50 million Americans. A part of the ecumenical life and witness of the NCC is the provision of a venue and support for member communions and others to reflect together on emerging issues within the society in light of their Christian beliefs and commitment. As early as the 1970s the NCC began its efforts to meet the ethical, theological and pastoral challenges of the then emerging biotechnologies. With the general advances in technology and the breakthroughs symbolized by the Human Genome Project, the Council and its member communions have quickened their efforts to explore these questions from a theological perspective through a number of initiatives, including the preparation of this Study Guide to Bill McKibben's book "Enough: Staying Human in an Engineered Age." This guide is, by design, not held in copyright and may be duplicated at will and without express permission. It may be electronically downloaded at [www.electronicchurch.org/Genetics/Enough](http://www.electronicchurch.org/Genetics/Enough). The Council expresses its gratitude to Bill McKibben for his willingness for this project to take shape, and to Shannon Daley Harris who assisted in the preparation of the Study Guide. We commend it to your use in parishes, Councils of Churches, seminaries and other settings in which people of faith struggle to live faithfully in the world. It is our hope and expectation that you will feel accompanied by the Spirit in this process of prayer and reflection.*

*Rev. Eileen W. Lindner, Deputy General Secretary  
Research and Planning*

*Rev. Marcel A. Welty, Associate  
Research and Planning*

## What this Resource is About

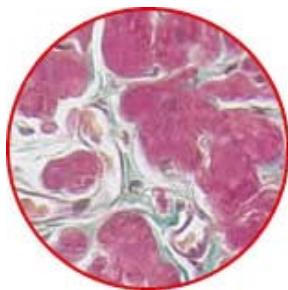
*Enough: Staying Human in an Engineered Age* explores the rapidly developing fields of human genetic engineering, nanotechnology, and advanced robotics. (Don't stop reading here! The book makes these topics comprehensible to anyone.) Author Bill McKibben argues that the accelerating development of these technologies has put us at the brink of a critical moral, ethical, and scientific threshold. If we cross the threshold, he warns, there may be no turning back and we risk losing the essence of what makes life meaningful and what makes human beings human. McKibben argues that the monumental decisions about advancing these technologies should not be left to the scientists alone; because of the technologies' moral and ethical dimensions, they call for the thoughtful participation and consensus of all of us. After introducing the three fields, McKibben asks if we want to rein in these technologies, if we can declare life as it is "enough". If we do, he explores whether it is possible to halt the development of these technologies. Finally, McKibben makes the case for embracing limits as the fullest expression of freedom and urges us to declare our world good enough—not perfect, but enough—without the further advancement of technologies that threaten a massive loss of meaning. *Enough* provides a thought-provoking stimulus for considering what it means to be human, what makes life good and meaningful, the place of scientific development in enhancing or detracting from the quality of life, and the place for each of us in weighing in on issues with moral and ethical dimensions that may affect us all.

Why is this subject important for Christians to study? Why should we acquire a working knowledge of the topic so that we might find our voices on the questions these technologies pose? Christians and the Church as a whole have recognized from the first the role of faith in shaping our perception of, response to, and engagement in public life, within and beyond the Church. We have understood ourselves to be stewards of God's good creation, with a responsibility for preserving and protecting the lives of God's creatures. The prophets reminded us of God's call to act with justice, mercy, and humble faith. Jesus modeled a ministry and mission of healing, wholeness and reconciliation. While none of these understandings tells us outright what the "right" answer is to the questions posed by McKibben's book, what they do underscore is our responsibility to consider the questions and engage in thoughtful discussion of the ethical, moral, human, and faith dimensions of the topic so that individually and even as a body we may make faithful decisions and take the actions called for.



### **T**his study guide provides:

- A description of a range of church settings in which this book may be studied and general suggestions of ways to structure the sessions.
- A section looking at each chapter and providing a brief synopsis of the chapter's focus along with a related biblical text and faith questions for reflection.
- Suggested questions for readers to consider before they begin reading and questions to consider when they finish the book.
- A list of main questions raised by the book, to keep in mind as the book is read, to stimulate discussion, and to provide a focus for study.
- A list of resources for those who wish to learn more about the topic.
- Web site of Church related statements (compendium)
- Web site for open forum discussion for people who want to engage the issue or book with others from other church communities



### **S**ettings for Use

*Enough: Staying Human in an Engineered Age* lends itself to use in a variety of church settings so you can consider the context that will be most appropriate for your particular congregation. This study guide is meant for a variety of settings—certainly congregational, but also ecumenical. This guide may even be useful in interfaith settings. The study guide itself, however, is intentionally Christian as is McKibben's book.

Possibilities include distributing the book and study materials to people for individual reading and reflection; discussing the book in one session of a Book Group or in a single session of a Christian Education class; studying the book over the course of five sessions of a Christian Education class; hosting a forum with speakers for which the book serves as background information to be read by participants beforehand; and a day-long or weekend-long retreat in which the book is explored through five or more sessions using a range of interactive approaches. The following suggestions should of course be modified as appropriate to suit the nature and custom of a group.

**Individual Reading and Reflection:** *Enough* may be distributed to interested individuals to read on their own. Along with the book, provide a copy of this study guide. Encourage readers to begin by reflecting on the questions asked in “Before You Start” and jotting down their responses on paper or in a journal. Then suggest that as they read the book they start with a quiet time of prayer and then read the suggested biblical passage for the chapter they are beginning. After each chapter, they may want to pause to reflect on, and even write responses to, the faith questions posed for that chapter, and also note their own thoughts and questions about the reading. The Main Themes and Questions can be used to focus their reading throughout, or to stimulate and guide reflection at the end of the book.

**Book Groups/One-Time Christian Education Class:** *Enough* may be used for the meeting of a Book Group or a one-time Christian Education class. In this instance, distribute the book and the study guide ahead of time (allow at least a month for the book to be read). Let people know that the book’s subject is one not generally familiar to people, so it is important to actually do the reading! (That is, it may be hard to jump into the conversation without having read the book.) At the same time, the author has made a complex subject quite accessible to a general audience, so reassure participants that the reading will not be overly difficult. When the book group/class convenes, begin with the “Before You Start” questions, and then invite responses to some of the main questions and to the book as a whole. Conclude with asking the “where do you want to go from here?” questions. Depending on the nature of your group/class, you may want to conclude with singing “God Marked a Line and Told the Sea” by Thomas Troeger (lyrics provided here; music found in some hymnals.)

**Christian Education Class—Five Sessions (or Wednesday night Bible Study, or Lenten Series):** A Christian Education class (or other group) that meets for five sessions can discuss one chapter each week. Distribute the book before the first week along with a copy of the “Main Themes and Questions” sheet. Ask participants to read the first chapter. (Provide the caution and reassurance described in the paragraph above.) When the first session begins, open with some of the “Before You Start” questions. Then, invite discussion of the substance of the chapter itself. Move into a time of faith reflection, reading the suggested biblical passage and inviting responses to the faith questions posed and any other reactions that participants had. At the end of each session, distribute the chapter-by-chapter synopsis, reading, and questions for the next chapter. At the end of the last session, discuss some of the “When You Finish” and “What Next” questions.



### Day-long retreat:

Distribute the book well in advance of the retreat so that participants can read it beforehand. Begin the retreat (perhaps over coffee and muffins) with the “Before You Begin” questions; perhaps people might locate themselves on a butcher-paper graphic or continuum. Schedule five sessions over the morning and afternoon, addressing each chapter in turn using the chapter-by-chapter synopsis, biblical passages, and questions. Depending on the size of the group, plan for some sessions to divide into dyads or small groups for discussion. During the sessions, participants should be encouraged to read aloud short passages of interest, confusion, or troubling assertion. Provide time during or between sessions for participants to reflect and respond in journals or through creative mediums such as clay and collages. Conclude with worship, perhaps drawing from the suggested biblical passages and the hymn “God Marked a Line and Told the Sea” by Thomas Troeger. You may wish to invite people more conversant with the field to look at the other resources listed in the guide and share the gist of them with the group during the retreat.

## **B**efore You Begin

Identify:

- Where you are coming from (e.g., don’t know about it and think it will be over your head; know a little and don’t believe it could really happen; know about it and think it is inevitable; know about it and hope someone else will stop it; know about it and look forward to the developments; want to know more so you can do something about it; want to know more about it but don’t think you’ll be able to do something about it).
- How you feel (e.g., excited to learn more; embarrassed at lack of information/understanding; skeptical about subject/argument; eager; anxious; defensive; frightened by the prospect and angered that only an elite will know about it and have access.)
- What you hope to get from the reading/study/reflection/discussion (want to be better informed; want to be informed so you can discuss it; want to be informed so you can take action to stop—or promote—it; want to know more to deepen your faith reflection on what it means to be human, etc.; have a particular view on the matters and want to see if they are represented in the reading/discussion; don’t know enough about the subject to even know what you think you’ll get from it; etc.)

## Chapter Synopses

**Chapter 1: Too Much** This chapter introduces the subject of germline genetic engineering and differentiates it from somatic gene therapy (changing genes in cells that affect certain organs or tissues in an individual without those changes being passed down to the next generation). It also describes the role of cloning in the former. McKibben describes the rapidly accelerating development of these technologies, and argues that they “call into question... our understanding of what it means to be a human being.”

**Biblical passage:** Psalm 139 (“I praise you, for I am fearfully and wonderfully made. Wonderful are your works; that I know very well.”)

**Questions for Reflection:** What do you think drives the development of these technologies? Do you see the development as positive or negative, and why? How is germline therapy like or unlike previous advances in science? What does it mean to be human? Are humans already “fearfully and wonderfully made”? Would germline genetic engineering enhance or detract from that? What makes your life meaningful? If you had the choice, would you change your genes? How about your children’s? Do these technologies enhance God’s wonderful work, or do they detract from God’s original design, or are we a part of God’s wonderful creative processes and God’s purposes are carried out by our activities? What role does sin have? Is human hubris an issue?

**Chapter 2: Even More** This chapter introduces the fields of advanced robotics and nanotechnology, describing how they work and how they might change the world. McKibben again argues that the exponential speed at which these technologies are being developed creates an urgent need for consensus about their further development, and explores the risks of self-replicating technologies that threaten to “overwhelm the human scale.” He concludes by appealing for an alternative vision to counter the scientific vision these technologies offer; “some other account of who we are, and what we might be.”

**Biblical passage:** Matthew 4:1-11 (Temptation of Christ, to exchange his integrity for limitless power.)

**Questions for Reflection:** What is most appealing, or tempting, about the promises of these technologies? What do you think the risks are? The rewards? In what ways might these technologies compete for our faith and devotion? What is your vision of who we are and what we might be? Do these technologies add to or threaten that vision? Is this very power given by God for our sakes?



**Chapter 3: Enough?** This chapter asks if we *want* to rein in these technologies, and whether it is appropriate to do so. McKibben invites us to declare that life as it is, and as it naturally develops, is good enough. “Is it possible that our technological reach is very nearly sufficient now?” He addresses three key ways in which our world is not so good—poverty, illness, and death—and considers if the promise of these technologies is necessary or likely to remedy them.

**Biblical Passage:** Genesis 1:1-2:4 (“...and indeed it was very good.”), Revelations 21.

**Questions for Reflection:** What is your vision “of who we are and what we might be”? Is the world that we inhabit good? Is it good enough? Do you think these technologies make our world better or worse? McKibben suggests that we need a “new way of looking at the present” to consider it “enough.” Do you agree? What would a new way of looking at the present be; how would we cultivate that perspective? What other examples come to mind of instances when reflective Christians have said “enough” and sought to set limits?

**Chapter 4: Is Enough Possible?** “*Can* we, even if we want to, actually rein in these technologies? Can the opposition to them ever be more than academic?” McKibben looks at examples from other cultures and times when societies have chosen not to employ technologies. He asserts again that the decisions about unleashing these technologies is not to be left to scientists but demands our thoughtful participation, and that the political arena provides a forum in which to make them.

**Biblical Passage:** Consider the story of the Tower of Babel (Genesis 11), see also Isaiah’s description of the Peaceable Kingdom (Isaiah 11)

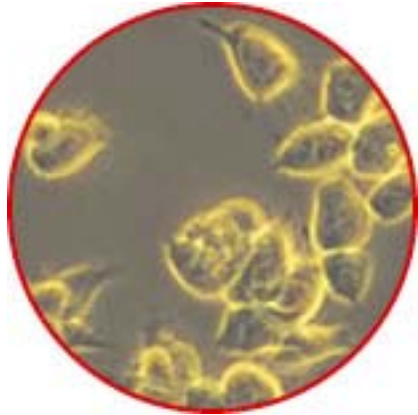
**Questions for Reflection:** How do you feel right now about weighing in on these decisions? Do you think you can make a difference in what happens? What do you think is required to impact the development of these technologies (to support or restrain them)? What would prompt you to, or keep you from, making your voice heard on this subject? Beyond acting as an individual, what do you think the role of the Church and/or faith communities ought to be on this concern? Are we playing God?

**Chapter 5: Enough** In this final chapter, McKibben argues that what makes us unique as humans is our capacity to restrain ourselves, to set limits on our desires, and to decide not to do something we are capable of doing. In short, to say “Enough.” He contends that to do so regarding these technologies is “our last best hope to prevent the wholesale loss of meaning we now face.” McKibben points to examples from creation to the crucifixion to affirm the meaning of restraint and limits. McKibben concludes, “To call the world enough is not to call it perfect or fair or complete or easy. But enough, just enough. And us in it.”

**Biblical Passage:** Luke 23:33-43 (McKibben references Jesus’ power of self-limitation....“let him save himself”) or Gen. (forbidden fruit), Or, “give us this day our daily bread” coupled with the story in Numbers about the rabble who clamor for meat in the wilderness (manna from heaven is not good enough) and die when they eat too much of the flock of birds that descends.

**Questions for Faithful Reflection:**

How might a lack of sensing life’s meaning fuel these technologies? How might an appreciation for life’s meaning fuel them? In what ways do you believe these technologies could threaten “a wholesale loss of meaning”? In what ways could they enhance it? Can you think of an instance in which new technology enhanced your life? Interpersonally, with family, intellectually, in other situations? When has technology enhanced your life and when has it made it less so? In what ways do you see the capacity to restrain ourselves and set limits as part of what makes us human? How can setting limits and restraint be meaningful? Do you see, as does McKibben, creation and the crucifixion as seminal examples of the embrace of restraint and limits? (see p. 209) Are there other biblical or theological grounds for setting limits in these arenas? What role does our feeling about death play in this topic? About advancement/development? About choice? What makes your life meaningful? Is there a goal to our existence? Do these technologies help us get there or get in the way?





# Hymn

## God Marked a Line and Told the Sea

God marked a line and told the sea  
its surging tides and waves were free  
to travel up the sloping strand  
but not to over take the land.

God set one limit in the glade  
where tempting, fruited branches  
swayed,  
and that first limit stands behind  
the limits that the law defined.

The line, the limit, and the law  
are patterns meant to help us draw  
a bound between what life requires  
and all the things our heart desires.

But, discontent with finite powers,  
we reach to take what is not ours  
and then defend our claim by force  
and swerve from life's intended course.

We are not free when we're confined  
to every wish that sweeps the mind  
but free when freely we accept  
the sacred bounds that must be kept.

*Note: May be sung to the hymn tune Truro or other  
LM (Long Meter)*

Text: Thomas H. Troeger, (born 1945)  
from Borrowed Light  
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## When You Finish

Consider:

- Where you are on the topic now,
- How you feel about it, and
- What you want to do next.
- Is Bill McKibben believable or is he “Chicken Little.”
- What are others, especially scientists who are Christian, saying about this topic?

## What Next?

The field of biotechnology is a very dynamic one as are the materials which offer reflection on their use from a religious or theological perspective. Many denominations, theological institutions and others are regularly producing new study materials, policy statements and analysis on a variety of topics related to these issues. In follow-up to this book and study guide you may wish to contact your own church or denomination to find out what those in your faith tradition are thinking and saying. Also you may wish to contact the National Council of Churches for further information about our work in this field. Contact us at: [Genetics@nccusa.org](mailto:Genetics@nccusa.org).



### **Overall Questions for Reflection**

Major themes and questions run throughout the book.

Holding them in mind can provide structure or context for the mind-boggling details. Some of these major themes and questions are:

- What does it mean to be human?
- What gives our life meaning?
- What does or could diminish life's meaning, and what it means to be human?
- What does or could enhance life's meaning, and what it means to be human?
- What roles do progress/development and limit-setting/restraint play in what it means to be human?
- Is our world fundamentally "good," or "good enough"? Are we, as human beings in this day and age, "good enough"? If we aren't, what would represent an improvement, what would make us "better" to the point of being "good enough"? Can the improvements we desire be achieved without crossing the thresholds described in the book (germline genetic engineering, nanotechnology, and advanced robotics)?
- Why should we continue developing these technologies/moving down this path; or why should we not continue developing these technologies?
- What criteria should we use for making decisions about the development of these technologies? What are the moral or ethical categories that should guide our thinking about them?
- What are the emotional factors that impact this decision-making? What are the legal or regulatory questions to consider? How does quality of life come into the consideration of these technologies? What would enhance it? What would detract from it? How should competing views be weighed?
- In what arena should these questions be decided? Legislative? Legal? Scientific? Public? Theological?
- What might be the impact of not acting? Not deciding? Not weighing in on these questions?
- The author writes with the explicit assumption that most of the readers are Westerners, yet he considers the impact of the technologies, or of limiting them, on those not in the West. Do you think that readers other than the presumed Westerners would support his argument/reasoning?

# **G** oing Further

- Join an un-moderated public email discussion about “Enough” and this study guide.  
(Send a blank email to [join-enough@list1.nccusa.org](mailto:join-enough@list1.nccusa.org))

## **Check out these other sources:**

- **Genetics and Society Website**  
([www.genetics-and-society.org](http://www.genetics-and-society.org))
- **Kirk of Scotland Resources**  
([www.srtp.org.uk](http://www.srtp.org.uk))
- **Receive ChurchNet Emailings**  
a periodic Email-based newsletter  
(send a blank email to [join-churchnet@list1.nccusa.org](mailto:join-churchnet@list1.nccusa.org))
- **Receive Eculink**  
the print newsletter of the NCC  
(send your name and address to [mlyris@nccusa.org](mailto:mlyris@nccusa.org))
- **Browse the NCC website**  
events and news from the ecumenical community  
([www.nccusa.org](http://www.nccusa.org))



## **National Council of Churches**

National Council of the Churches of Christ in the U.S.A.

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This study guide is available at:  
[www.electronicchurch.org/Genetics/Enough.pdf](http://www.electronicchurch.org/Genetics/Enough.pdf)