

137 At the time of this writing, I have spent a quarter of a century in islet research, but
138 the purpose of this article is not to share my journey with you. I do not want to bore
139 you with anecdotes from my experiences, but it is impossible that my views will not
140 be subjective.

141 **Be Clear About Your Goal**

142 Irrespective of whether you have started islet research recently, or you have spent
143 almost a whole life in islet research, it is worthwhile to reflect upon your goals.
144 Here is the big picture. About 194 million people in the world are suffering from
145 some form of islet failure, and by 2025 this number may increase to 333 million.
146 The β -cells of many young people and children are dead. To live a normal life,
147 they need to take insulin injections daily, and they need to prick their finger tips
148 for testing plasma glucose concentration, numerous times. In others, overwork of
149 the β -cells caused by overeating leads to the failure, and eventually to the death of
150 these cells. If you want to see the burden of islet failure, do not hesitate to visit a
151 nearby diabetes clinic. This may open your eyes, or give you a much needed
152 insight.

153 Your goal is to contribute to the discovery of something, so that this huge human
154 tragedy can somehow be prevented, treated, or cured. Your goal is not primarily to
155 publish papers or just to do some experiments solely to satisfy your own intellectual
156 curiosity. Your goal is not just counting the numbers of your publications, and their
157 impact factors, and not to secure a promotion, advance your own career, or receive
158 prizes. You have a bigger goal, which you may or may not reach, within your
159 lifetime, but if you are conscious of your ultimate goal, you are better prepared to
160 work steadily towards that goal. You may then become the islet researcher that you
161 dream to be.

162 If you wish not to have a clear goal and prefer to see your scientific journey as
163 the goal, then it is up to you. I think it is important to have visions and goals, perhaps
164 some small goals, if not a big goal to start with.

165 **Become the Finest Islet Researcher**

166 The making of an islet researcher is not easy. Becoming a good islet researcher can
167 be a long process. Educate yourself, keeping in mind that it is never too early or too
168 late to start learning anything new. Through a choice of an unconventional path of
169 education, you may become a specialist in more than one subject, and may thus be
170 better prepared. You may first become a molecular biologist, and then educate
171 yourself as a chemist. Numerous other combinations are possible. Enrich yourself
172 with the necessary knowledge, and the skills from whatever source you need
173 to. You may need to move to the environments that promote creativity, that have
174 better infrastructures, and traditions for good research. To do this, you may need to
175 leave your home country, and then struggle hard to adapt yourself to the new
176 environments.

177 You almost certainly need to acquire a broad base of knowledge before you
178 focus on some special areas. At the same time, you must also be able to filter out as
179 much unnecessary information and distractions as possible. In an age of informa-
180 tion pollution, your ability to decide what to filter out, and to filter those out
181 effectively, may determine how intelligent you are. Clearly, you will not be able
182 to do many things, at least not at the same time.

183 Start with asking one of the most important questions in the field of islet
184 research, keeping in mind that you are expected to discover things that you are
185 not aware of beforehand. Do not waste time in rediscovering the wheel. If you are
186 not asking an important question, then it does not matter how sophisticated instru-
187 ment or advanced method you are using.

188 Identify your strength, strength of your institution, and that of your network if
189 you wish to. Once you have identified the strengths, use those. Do what you think is
190 the right thing to do without fear of being judged by others, but resist the temptation
191 to work on many projects at the same time; take the one you have started to
192 completion. You do not need to compare yourself with others. You do not need
193 to think that you are less talented than others. Do not give up when the going
194 forward seems tough. Dig as deep as possible or change the direction based on your
195 sound judgment. See mistakes as valuable learning experiences. If you have time,
196 get inspirations by reading the life histories of other great scientists. From such
197 readings, you may get important insights about how to develop your own intuition
198 and creativity, and about how to get clues about the so called “unknown
199 unknowns.”

200 Depending on your question and the nature of the project, you may find it useful
201 to work alone or with a small dedicated team, or you may need to network
202 personally with a handful of scientists, including some who are not conventional
203 islet researches. You may benefit more if you attend meetings that do not deal with
204 islet research or if you read papers that do not deal with islet research. If you can
205 bring a small piece of new knowledge from the fields that are very distant from the
206 contemporary islet research, and apply that knowledge to solve some of the
207 common questions in the field of islet research, that may contribute to a
208 breakthrough.

209 Islet research is not just about science, it is a way of life. You have to make
210 difficult choices during your journey. You are sincere about your purpose in life.
211 At times you may have to juggle with too many bolls in the air. It will affect your
212 social life and your relationships with your near and dear ones. Set your priorities
213 right. You have decided to spend your life for the benefit of people who have islet
214 failure. You are not after money, fame, glamour or festivities. You are a genuine
215 islet researcher.

216 **The Ecosystem of Islet Research**

217 Unfortunately, it is not enough that you have developed yourself as one of the finest
218 islet researchers, and that you clear visions and goals. The chances of breakthroughs
219 in islet research will depend on what we can call the ecosystem of islet research.
220 The ecosystem of islet research will determines the growth, survival, and creativity
221 of the type of islet researchers that I have alluded to. Important components of this
222 ecosystem include the educational and research enterprises, the funding agencies,
223 the governments and policy makers, industries, publishers, and last but not the least,
224 the patient organizations. The ecosystem of islet research, as well as the ecosystem
225 of research in general, has changed over the past decades, and it will keep changing.
226 For an individual islet researcher, it may be difficult to track these changes, and it
227 may be impossible for them to adapt to the changes that are taking place rather
228 rapidly. At first sight, it may appear that the ecosystem has worked well, and has
229 ensured important discoveries at a steady rate. Islet researchers are not supposed to
230 question the ecosystem; the only thing expected of them is to adapt to the changes
231 for their own survival and earn their bread and butter.

232 Survival of the islets researchers depends on their ability to write grant applica-
233 tions, and their ability to convince the people who read those applications that their
234 ideas are excellent and the goals are achievable. Islet researchers spend enormous
235 amount of time, money, and energy on writing grants and in about 80 % of the
236 cases, the applications are rejected. It is impossible to assess who is the most
237 talented islet researcher. Since talent cannot be measured, an opportunistic way is
238 to measure what islet researchers have published in the past and how many times
239 those publications have been cited. Even if one is able to identify the most talented
240 islet researchers based on their performances in the past, it is impossible that these
241 selected islet researchers will perform equally well in the future. Some scientists
242 think that system we have is counter-productive, and wasteful of time and energy
243 (Garwood 2011).

244 The ecosystem of research, in general, seems to have changed in such a way that
245 it is possible for some academic psychopaths to fool the system. They will write in
246 their grant applications whatever is needed, and they will do whatever else is
247 necessary to manipulate the system in their favor. One of the most talented
248 scientists in the world published in one of the world's most luxurious journal, one
249 of the most exciting breakthroughs in stem cell research that turned out to be bogus
250 (Normile 2009). In one investigation, a bogus manuscript, written by some bogus

251 authors, from some bogus universities was accepted for publication by many
252 scientific journals (Bohannon 2013). The system has become so corrupted that it
253 is apparently possible for some scientists to publish without doing any experiment
254 (Hvistendahl 2013). Don Poldermans published more than 300 papers some of
255 which were fraudulent. Changes in clinical practice based on these papers has
256 caused death of numerous people (Chopra and Eagle 2012). In islet research also,
257 data published in many papers published in elegant journals cannot be reproduced.
258 Many islet researchers are putting their names on papers written by their students,
259 colleagues, and friends with minimal intellectual contributions.

260 It is possible that the altered ecosystem of islet research is supporting the
261 proliferation of a group of islet researchers who are aggressive bullies, and aca-
262 demic psychopaths, and it is leading to the extinction of the finest islet researchers
263 who are genuinely talented and sincere, but are unable to survive in the ecosystem
264 which perceive as unsupportive and hostile.

265 Final Remarks

266 There is no take home message in this article. I have been partially able to write part
267 of what I have thought, and if you have read this, then I have perhaps been able to
268 transfer my thoughts to you.

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