Riccardo's Impact on Gender Equity

Remarks by Meg Urry, on the occasion of his memorial symposium, May 2019

I was a graduate student at JHU when my advisor, Art Davidsen, proposed bringing STScI to Baltimore – so I watched it grow from the ground up. The first two employees (Barry Lasker, Rudi Albrecht) were hired in 1981, a time when everybody said, "discrimination is over" – indeed, I was regularly told how much easier women had it, because of affirmative action. Institutions would be so eager to hire women that men were truly disadvantaged. Surely, as a brand-new institution, I thought, STScI would embody this new world of gender equity.

Yet after being a postdoc at MIT for a few years, when I returned to Baltimore as in 1987 (Mike Fitchett, Laura Danly and I were among the first of what are now called Giacconi Fellows), only 1 in ~60 PhD AURA tenure-track staff was a woman (Neta Bahcall). Even though all hiring had happened over the previous 6 gender-supposedly-equal years, they were almost all white men, mostly young or mid-career, a few older. Neta returned to Princeton about a year later – after, by the way, securing the kind of substantial guest observer funding that we had never before imagined and that continues to this day; all of astronomy owes her a big thank you for that – and at about the same time, Anne Kinney was hired. 1 in 60 faculty was a woman, at a time when women were earning 10-15% of Astronomy PhDs. (corresponding to 6-9 women, not 1). I was hired onto the tenure track the year after Anne.

The lack of women bothered me. The lack of awareness of this strange, unnatural demographic bothered me more. I started to discuss it with colleagues.

One day, sitting in the cafeteria conference room, as the only woman in a group of perhaps 30 astronomers, I listened to the discussion of that year's hiring. A list of applicants filled the screen – last names and initials only – and the top candidates were described. I didn't hear the name of any women. Toward the end of the meeting, I asked, "Are any of these candidates women?" People were angry I asked the question. "We don't care about gender," they said, "we just want the best." Or, "We are gender blind." Or, "What does gender have to do with anything?" And so on. I realized I might choke up if I said anything more so I just shut up.

When I got back to my office after the meeting, the phone rang. It was Riccardo (who had also been at this meeting). He asked, "What just happened down

there?" I replied that it was very difficult always being the only woman in the room. He said, "Come talk to me," so I headed over to his office. That was the first of several conversations – I remember in particular a conversation where Anne Kinney and I talked about specific difficulties women faced at the Institute. It took Riccardo a minute to absorb the point because it felt foreign to him. He explained he was not biased against women, that he knew many strong women, his mother taught math and physics, he was used to women leaders. He had appointed several women to his leadership team, at a time when that was not common.

To be honest, I've gotten that "I'm not biased" response from lots of men. What was different about Riccardo was that he took it a step further. He readily agreed that, in a new institution with no history of hiring during past periods of discrimination, there was no reason to have such a gender-unbalanced staff. And he tried to understand how that hiring came about. [I'm talking about the tenure-track staff because that was the group I knew best. But similar trends were happening in other areas as well. Also, I'm talking about gender equity only; it took many more years to start addressing other "outsider" groups, like people of color, LGBTQ astronomers, religious minorities, veterans, etc.]

STScI started running much broader job ads. Rather than saying, We need someone who can build such-and-such kind of spectrometer, we said we were looking for excellent scientists. This was at a time when roughly 4-5 people per year were being hired into the faculty track. These broader ads brought many more applicants and, I would argue, raised the bar.

At the next hiring meeting, back in the CafCon, *Riccardo* asked "How many women are on the list?" People fell all over themselves to respond positively. Because he, as a leader, indicated this was a value, others immediately rushed to manifest that value. In just a few years we hired Stefi Baum, Melissa McGrath, Anuradha Koratkar, Laura Danly, Hashima Hasan, Lori Lubin, and I've probably forgotten other key people. All of them made vital contributions to the Institute, which alas there is not time to tell you about.

Let me be clear: a lot of people helped make change. But what counted was that *the Director decided to make it happen*. He accepted that, for whatever reason (and we now understand much more about implicit bias than we did then), STScI had under-hired women, and if we were to be the best institute we could be, that needed to be fixed.

He also made sure women were well represented on external committees and panels. One year, I remember, France Cordova (with Riccardo's blessing) presented an all-female slate for election to the STIC (Space Telescope Institute Council). That doesn't seem as outrageous now as it did then. Riccardo simply did what needed to be done to get to the right answer. He understood it was about excellence, not about social engineering or quotas. He saw that we were losing out if we were ignoring (female) talent.

We held the first Women in Astronomy meeting ever, in Baltimore, in 1992. It was another response to the problems Anne and I had pointed out (the idea was Goetz Oertel's.) 200 people attended (that was our limit; we had to turn people away). (Quite a few are in the audience today, including some of the organizers and speakers.) We wanted to elevate the issue and to figure out solutions. Riccardo suggested writing a manifesto – a list of recommendations for how to improve gender equity. With Sheila Tobias's help, Laura Danly. Ethan Schreier, and I wrote the Baltimore Charter for Women in Astronomy. Google it. It's good. A little obvious, in hindsight, and seen as positively radical at its debut, but we hit all the issues that are still concerns today.

Assumptions:

- Women and men are equally capable of doing excellent science.
- Diversity contributes to, rather than conflicts with, excellence in science.
- Current recruitment, training, evaluation, and award systems often prevent the equal participation of women.
- Formal and informal mechanisms that are effectively discriminatory are unlikely to change by themselves.
- Both thought and action are necessary to ensure equal participation for all.
- Increasing the number of women in astronomy will improve the professional environment and improving the environment will increase the number of women.

Recommendations:

1. Selection processes: Clear goals, transparency, affirmative action, women participating, judge by outcomes.
2. Recognize and address family obligations.
3. End sexual harassment with swift and substantial action.
4. Use gender-neutral language and illustrations.

5. Address issues of physical safety.

Call to action: We are all responsible for getting this done, especially leaders.

If you want a poster-sized version, send me your address, I have many copies in my office at Yale. Also, the Proceedings of the Conference are well worth reading. In particular, I recommend reading Riccardo's opening talk at the Baltimore conference. Among other things, he said:

> During my tenure as Director here at the Institute I was frankly surprised to find how much concerted and continuing effort is required to substantially improve the status of women colleagues. To achieve greater participation and better career prospects will require persistence and better information.

Then he ended with some advice I've never forgotten:

> …in life there are only four combinations of conditions:
>
> 1. tolerable and changeable
> 2. tolerable and unchangeable
> 3. intolerable and changeable
> 4. intolerable and unchangeable.

Most people spend their time on item 4. Riccardo recommended focusing on #3. I've thought of that many times. It speaks to why he was so effective.

Despite Riccardo's best efforts, the situation of women at STScI was unfortunately not stable. Pretty much every tenured woman left for another position, as did the untenured women, but not before we made inroads on changing attitudes and understanding. Many key steps were made after I left STScI for Yale.

But the lesson I learned at first hand was the difference a determined leader can make. He might not have identified the problem initially but he looked at the data and agreed there was one. That was Riccardo. He had strong opinions and God knows he could say cutting things but he readily changed his mind when convinced by the facts. And then he acted.

I've had my disagreements with Riccardo. One of the last times I saw him, at an X-ray astronomy conference in Bologna, he berated me for having been part of what he considered a failed decadal survey (because it didn't recommend his project, WFXT). But that was cranky Riccardo. The genius Riccardo outweighs him a hundred times over. I have never known anyone as prescient, as insightful, as

powerful as he could be when he had an aim in mind. He was simply *sui generis*. Without Riccardo, the landscape of astronomy today would look very different, we would know far less, and women would not be approaching parity in astronomy.

APPENDIX:

The Baltimore Charter for Women In Astronomy

``*Women Hold up Half the Sky''* -- Chinese saying

Preamble

We hold as fundamental that:

- Women and men are equally capable of doing excellent science.
- Diversity contributes to, rather than conflicts with, excellence in science.
- Current recruitment, training, evaluation and award systems often prevent the equal participation of women.
- Formal and informal mechanisms that are effectively discriminatory are unlikely to change by themselves. Both thought and action are necessary to ensure equal participation for all.
- Increasing the number of women in astronomy will improve the professional environment and improving the environment will increase the number of women.

This Charter addresses the need to develop a scientific culture within which both women and men can work effectively and within which all can have satisfying and rewarding careers. Our focus is on women but actions taken to improve the situation of women in astronomy should be applied aggressively to those minorities even more disenfranchised.

Rationale

Astronomy has a long and honorable tradition of participation by women, who have made many significant and highly creative contributions to the field. Approximately 15% of astronomers worldwide are women but there is wide geographical diversity, with some countries having none

and others having more than 50%. This shows that scientific careers are strongly affected by social and cultural factors, and are not determined solely by ability.

The search for excellence which unites all scientists can be maintained and enhanced by increasing the diversity of its practitioners. Great discoveries have always occurred in times of cross-cultural enrichment: along trade routes, in periods of geographical exploration, among immigrants and multinationals. The introduction of new approaches frequently results in new breakthroughs. Achieving such diversity requires revised, not lesser, criteria for judging excellence, free of culturally-based perceptions of talent and promise.

A review of available information on the relative numbers and career histories of women and men in science reveals extensive discrimination. Access to the profession -- graduate education, hiring, promotion, funding -- is not always independent of gender. Unequal treatment of women in the laboratory, the lecture hall and the observatory, more subtle but at least as important as overt discrimination, creates a chilly climate which discourages and distresses women, alienates them from the field, and ultimately damages the profession.

Existing inequities can be eliminated only partially by legal stricture or they would not continue today. Improving the situation requires awareness of the very real barriers women currently face, including sexual stereotyping, opportunity and pay differentials, inappropriate time limits on advancement, overcritical scrutiny and sexual harassment. Sexual harassment, ranging from an uncomfortable work environment to unwanted sexual attention to overt extortion of sexual favors, can force confrontation between junior astronomers and older, better established colleagues who can strongly influence career advancement; it diverts attention from science to sex, places an undue burden on the harassed, and damages their self-esteem.

The entire profession must assume the immediate and ongoing responsibility for implementing strategies that will enable women to succeed within the existing structures of astronomy and allow the desired acceptance of diversity to develop fully.

Recommendations

1. Significant advances for women have been made possible by affirmative action. Affirmative action involves the establishment of serious goals, not rigid quotas, for achieving diversity in all aspects of the profession, including hiring, invited talks, committees, and awards.

   (a) Standards for candidates should be established and publicized in advance. Criteria that are culturally based or otherwise extraneous to performance or the pursuit of scientific excellence should not be applied.

   (b) Women should participate in the selection process. If insufficient numbers of women are available at particular institutions, outside scientists can be invited to assist. Men must

share fully the responsibility for implementing affirmative action, as they hold the majority of leadership positions.

(c) The selection of women should reflect on average their numbers in the appropriate pool of candidates and normally at least one woman should be on the short list for any position, paid or honorific. When women are underrepresented in the pool, their numbers should be increased by active and energetic recruitment.

(d) Demographic information for each astronomical organization should be widely publicized. If the goals for affirmative action are not achieved, the reasons must be determined.

2. The criteria used in hiring, assignment, promotion and awards should be broadened in recognition of different pacing of careers, care of older and younger family members, and demands of dual-career households. Provision for day care facilities, family leave, time off and re-entry will instantly improve women's access to an astronomical career and is of equal benefit to men.
3. Strong action must be taken to end sexual harassment. Education and awareness programs are standard in U.S. government and industry and should be adopted by the astronomical community. Each institution should appoint one or more women to receive complaints about sexual harassment and to participate in the formal review process. Action against those who perpetrate sexual harassment should be swift and substantial.
4. Gender-neutral language and illustrations are important in the formation of expectations, both by those in power and those seeking entrance to the profession. Documents and discussions should be sensitive to bias that favors any one gender, race, sexual orientation, life style, or work style. Those who represent astronomy to the public should be particularly aware of the power of language and images which, intentionally or unintentionally, reflect on astronomy as a profession.
5. Physical safety is of concern to all astronomers and of particular significance to women, who often feel more vulnerable when working alone on campus or in observatories. This issue must be addressed by those in a position to affect security, making it possible for everyone to work at any hour, in any place, as necessary.

Call to Action

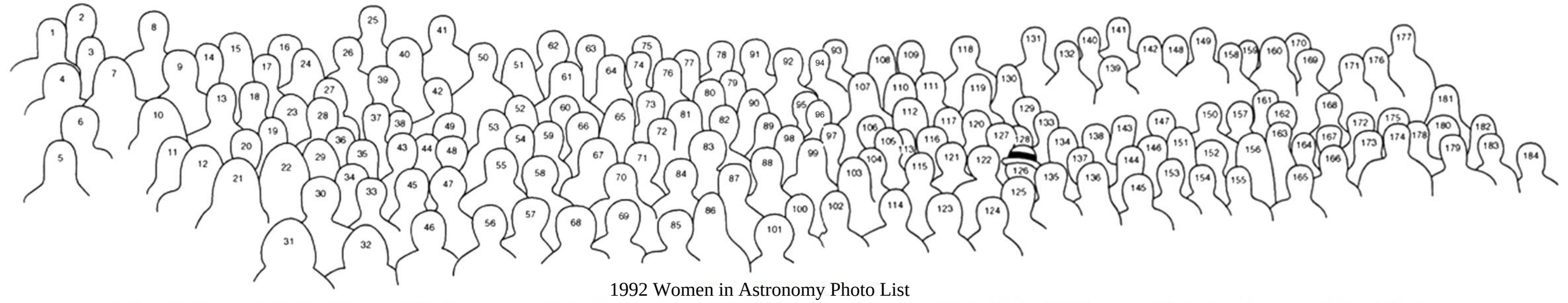
Improving the situation of women in astronomy will benefit, and is the responsibility of, astronomers at all levels. Department heads, observatory directors, policy committee chairs, and funding agency officials have a particular responsibility to facilitate the full participation of women: to nurture new talent, to ensure the effectiveness of teaching, and to examine and correct patterns of inequity. The profession should be responsible for regular review and assessment of the status of women in astronomy, in pursuit of equality and fairness for all.

A rational and collegial environment which allows full expression of intellectual style is necessary for achieving excellence in scientific research. Women should not have to be clones of

male astronomers in order to participate in the mainstream of astronomical research. Women want and deserve the same opportunity as their male colleagues to achieve excellence in astronomy.

Signatories

Elise Albert, Ron Allen, Martha Anderson, Martina Belz Arndt, Neta Bahcall, Nancyjane Bailey, Suchitra Balachandran, Vicki Balzano, Stefi Baum, Barbara Becker, Lynne Billard, Karen S. Bjorkman, Cindy Blaha, Elizabeth Bonar, Peter Boyce, Susan W. Boynton, Mimi Bredeson, Margaret Burbidge, Claude Canizares, Nancy Chanover, Grace Chen, Jennifer Christensen, Frederick R. Chromey, Geoffrey C. Clayton, France A. Cordova, Anne Cowley, Laura Danly, Doris Daou, Doug Duncan, Joann Eisberg, Debra Elmegreen, Bruce Elmegreen, Michael Eracleous, Sheryl Falgout, Deborah C. Fort, Pru Foster, Diane L. Fowlkes, Linda French, Riccardo Giacconi, Diane Gilmore, Sherri D. Godlin, Daniel Golombek, Anne Gonnella, Shireen Gonzaga, Eva K. Grebel, Noreen Grice, Elizabeth Griffin, Heidi B. Hammel, Robert J. Hanisch, Helen M. Hart, Hashima Hasan, Isabel Hawkins, Tim Heckman, Charlene Heisler, Lori K. Herold, James E. Hesser, Susan Hoban, Jane Holmquist, Nancy Houk, Sethanne Howard, Svetlana Hubrig, Roberta Humphreys, Todd Hurt, Judith A. Irwin, Deepa R. Iyengar, Vera Izvekova, Helmut Jenkner, Inger Joergensen, Jennifer Johnson, Liana Johnson, Debora M. Katz-Stone, Laura Kay, Anne Kinney, Denise V. Kitson, Anuradha Koratkar, Ira Kostiuk, Susan Lamb, Adair Lane, Krista Lawrance, Robin Lerner, Janet Levine, Stephen Levine, Karen Lezon, Omar Lopez-Cruz, James Lowenthal, Olivia L. Lupie, Julie Lutz, Duccio Macchetto, Sue Madden, Bianca Mancinelli, Cathy Mansperger, Nathalie Martimbeau, Melissa McGrath, Jaylee Mead, Kathy Mead, Mike Meakes, Karen J. Meech, Windsor A. Morgan, Jr., Lauretta M. Nagel, Susan Neff, Joy Nichols-Bohlin, Goetz Oertel, Sally Oey, Angela V. Olinto, Nancy Oliversen, Samantha Osmer, Nino Panagia, Pat Parker, Judith Perry, Joanna Rankin, Luisa Rebull, Patty Reeves, Peter Reppert, Mercedes T. Richards, Carmelle Robert, Claudia A. Robinson, Elizabeth Roettger, Vera Rubin, Laura Ann Ruocco, Penny D. Sackett, Maitrayee Sahi, Londa Schiebinger, Regina E. Schulte-Ladbeck, Ethan Schreier, Andrea Schweitzer, Anouk A. Shambrook, Lea Shanley, Robin Shelton, Debra Shepherd, Lisa E. Sherbert, Angela Silverstein, Linda (Dix) Skidmore, Tatiana Smirnova, Ulysses J. Sofia, Emily Sterner, Sarah Stevens-Rayburn, Peter Stockman, Susan Stolovy, Alex Storrs, Svetlana Suleymanova, Cindy Taylor, Sheila Tobias, Eline Tolstoy, Andrea Tuffli, Meg Urry, Paul Vanden Bout, Fabienne van de Rydt, Liese van Zee, Frances Verter, Stefanie Wachter, William J. Wagner, Nolan R. Walborn, William H. Waller, Harold A. Weaver, Rachel Webster, Alycia Weinberger, Daryl Weinstein, Barbara Whitney, Reva K. Williams, Lance Wobus, Sidney Wolff, James P. Wright, Katharine C. Wright, Eric W. Wyckoff, Emily Xanthopoulos, Sophie Yancopoulos



1992 Women in Astronomy Photo List

1. Thomas Hamilton
2. Anouk Shambrook
3. Judy Fleischman
4. Anne Gonnella
5. Susan Hoban
6. Andrew Wilson
7. Angela Olinto
8. Pete Reppert
9. Cindy Blaha
10. Janna J. Levin
11. Sylvanie Waffington
12. Olivia Lupie
13. Elizabeth Roettger
14. Jennifer Christensen
15. Susan Lamb
16. Mario Livio
17. Eric Wyckoff
18. Cathy Mansperger
19. Elizabeth Griffin
20. Sally Oey
21. Cherilynn Morrow
22. Jane Holmquist
23. Debbie Elmegreen
24. Lisa Sherbert
25. Douglas Duncan
26. Merri Sue Carter
27. Nancy Oliversen
28. Bruce Elmegreen
29. Sheila Tobias
30. Jaylee Mead
31. Reva Williams
32. Deoborah C. Fort
33. Andrea Schweitzer
34. France Cordova
35. Robin Lerner
36. Nancyjane Bailey
37. Ulysses J. Sofia
38. Jenny Wurster
39. Hashima Hasan
40. Sherri Godlin
41. Mike Meakes
42. Joy Nichols-Bohlin
43. Patty Trovinger
44. Andrea Tuffli
45. Sidney Wolff
46. Deepa Iyengar
47. Noreen Grice
48. Barbara Becker
49. Emily Xanthopoulos
50. Mercedes T. Richards
51. Stefanie Wachter
52. Liese van Zee
53. Suchitra Balachandran
54. Janet Levine
55. Riccardo Giacconi
56. Neta Bahcall
57. Lynne Billard
58. Margaret Burbidge
59. Pat Parker
60. Susan Stolovy
61. Judith Irwin
62. Eline Tolstoy
63. Diane Fowlkes
64. Svetlaina Hubrig
65. Charlene Anne Heisler
66. Peter Boyce
67. Ethan Schreier
68. Julie Lutz
69. Denise Kitson
70. Mimi Bredeson
71. Judith Perry
72. Goetz Oertel
73. Debra Schwartz
74. Isabel Hawkins
75. Bianca Mancinelli
76. Elise Albert
77. Sethanne Howard
78. Vera Izvekova
79. Alycia Weinberger
80. Karen Lezon
81. Kellie McNaron-Brown
82. Duccio Macchetto
83. Regina Schulte-Ladbeck
84. Debra Shepard
85. Roberta M. Humphreys
86. Londa Schiebinger
87. Vera Rubin
88. Lea A. Shanley
89. Luisa Rebull
90. Adrianne Slyz
91. Joanna Rankin
92. Svetlana Suleymanova
93. Prudence Foster
94. Melissa McGrath
95. Emily Sterner
96. Joanne Eisberg
97. Rachel Webster
98. Paul Vanden Bout
99. Elizabeth Bonar
100. Liana Johnson
101. Katherine Wright
102. Lance Wobus
103. Patrizia Caraveo
104. Eileen D. Friel
105. Fred Chromey
106. Stephen Levine
107. Martina B. Arndt
108. Samantha Osmer
109. Nancy Chanover
110. Emily Mason
111. Daryl Weinstein
112. Nathalie Martinbeau
113. Sue Madden
114. Michael Eracleous
115. Laura Kay
116. Adair Lane
117. Jennifer Johnson
118. Linda French
119. Lori K. Herold
120. Robert Hanisch
121. Mira Franke
122. Claudia Robinson
123. Jacqueline Fischer
124. Laura Ruocco
125. Lisa Buckley
126. Nancy Houk
127. Tania Smirnova
128. Anne P. Cowley
129. Cindy Taylor
130. Lisa Wells
131. James Lowenthal
132. Susan Neff
133. James Wright
134. Anne Kinney
135. Meg Urry
136. Laura Danly
137. Ira Kostiuk
138. Marla Moore
139. Grace Chen
140. Jim Etchison
141. Dave Soderblom
142. Robin Shelton
143. Omar Lopez-Cruz
144. Inger Jorgensen
145. Linda Grant
146. Todd Hurt
147. Claude Canizares
148. Daniel Golombek
149. Kp Kuntz
150. Rodger Doxsey
151. Krista Lawrance
152. Anuradha Koratkar
153. Vicki Balzano
154. Dorothy Fraquelli
155. Lauretta Nagel
156. Debora Katz-Stone
157. Nino Panagia
158. Helen Hart
159. Shireen Gonzaga
160. Fabienne Van De Rydt
161. Geoffrey Clayton
162. Alex Storrs
163. Debbie Kooleck
164. Carmelle Robert
165. Martha Anderson
166. Barbara Whitney
167. Karen Meech
168. James Hesser
169. Frances Verter
170. Diane Gilmore
171. Maitrayee Sahi-Sharma
172. Penny Sackett
173. Heidi Hammel
174. Windsor Morgan
175. Diane Alexander
176. Elbe Lang
177. Helmut Jenkner
178. Kathryn Mead
179. Derek Busazi
180. Doris Daou
181. Anne Gilden
182. Karen S. Bjorkman
183. Peter Stockman
184. Linda Skidmore