Innovative startups 2013

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US firms, particularly companies from the Boston area, continue to dominate *Nature Biotechnology's* listing of innovative startups, ranked in order of the 10 largest A rounds. This year's list is notable for the proportion of startups focusing on experimental gene therapies; indeed, firms developing adeno-associated virus (AAV) platforms garnered three of last year's largest A rounds. A familiar group of early stage funds participated in most of the financings in **Table 1**, although

the Children's Hospital of Philadelphia's decision to support a startup is notable. In total, the United States accounts for about two-thirds of firms receiving biotech A rounds in the broader life science field (**Fig. 1**); the United Kingdom ranks a very distant second. Although relatively few biotechs in France and Switzerland received A rounds, companies in those countries pulled in more on average than companies in the United States (**Table 2**).

Table 1 Top 10 A rounds in 2013 for innovative startups

Company	Amount raised (\$M); date; investors	Scientific founders	Other	Technology
Juno Therapeutics (Seattle)	\$120; Dec. 4; Arch Venture Partners, Crestline Investors	Renier Brentjens, Memorial Sloan-Kettering Cancer Center (MSKCC); Phil Greenberg, Fred Hutchinson Cancer Research Center (FHCRC) and the University of Washington; Michael Jensen, University of Washington School of Medicine; Stan Riddell, FHCRC and the University of Washington School of Medicine; Isabelle Rivière and Michel Sadelain, MSKCC	Hans Bishop, Juno CEO and former executive in residence at Warburg Pincus; Larry Corey, president and director of FHCRC; Richard Klausner, senior vice president and chief medical officer of Illumina, chairman of Audax Health; Robert Nelsen, managing director of ARCH Venture Partners	Engineered chimeric antigen receptor adoptive T cell therapy against cancer
Spark Therapeutics (Philadelphia)	\$50; Oct. 22; The Children's Hospital of Philadelphia (CHOP)	Jean Bennett, University of Pennsylvania; Beverly Davidson, University of Iowa; Katherine High and J. Fraser Wright, CHOP	Jeffrey Marrazzo, Spark president and CEO, industry entrepreneur	AAV gene therapies against blindness and hemophilia
Jounce Therapeutics (Cambridge, Massachusetts)	\$47; Feb. 14; Third Rock Ventures	James Allison and Padmanee Sharma, University of Texas MD Anderson Cancer Center; Thomas Gajewski, University of Chicago; Drew Pardoll, Johns Hopkins University; Louis Weiner, Georgetown University	Not applicable	Immunomodulatory therapeutics against cancer
Effector Therapeutics (San Diego)	\$45; May 20; US Venture Partners, Abingworth Management, Novartis Venture Funds, SR One, Astellas Venture, Osage University Partners, Mission Bay Capital	Davide Ruggero and Kevan Shokat, University of California, San Francisco	Steve Worland, formerly CEO of Anadys; Siegfried Reich, formerly research fellow at the Lilly Biotech Center in San Diego; Kevin Eastwood, formerly senior vice president of corporate development at Anadys	Small molecule translation regulators in cancer
Mitokyne (Boston)	\$45; Oct. 7; Astellas Pharma, MPM Capital, Longwood Founders Fund	Johan Auwerx, École Polytechnique Fédérale de Lausanne; Andrew Dillin, University of California, Berkeley; Ronald Evans, Salk Institute for Biological Studies; H. Robert Horvitz, Massachusetts Institute of Technology (MIT); Jodi Nunnari, University of California, Davis	Kazumi Shiosaki, managing director of MPM Capital	Small molecule enhancers of mitochondrial function
Editas Medicine (Boston)	\$43; Nov. 25; Flagship Ventures, Polaris Venture Partners, Third Rock Ventures, Partners Innovation Fund	Feng Zhang, Broad Institute of MIT and Harvard; George Church, Harvard Medical School (HMS); Jennifer Doudna, University of California, Berkeley; Keith Joung, Massachusetts General Hospital and HMS; David Liu, Harvard University	Kevin Bitterman, interim president of Editas Medicine and principal at Polaris Partners	Gene editing and clustered regularly interspaced short palindromic repeats (CRISPR) and transcription activator-like effector nuclease (TALEN) technology
GenSight Biologics (Paris)	\$41.6; April 8; Novartis Venture Funds, Abingworth Management, Versant Ventures, Index Ventures	José-Alain Sahel, Pierre and Marie Curie University; Botond Roska, Friedrich Miescher Institute; Jean Bennett, University of Pennsylvania; Luk Vandenberghe, Harvard University; Serge Picaud, Vision Institute	Bernard Gilly, previously chairman and CEO of Fovea Pharmaceuticals	AAV2 gene therapies against blindness and retinal degenerative diseases
Sideris Pharmaceuticals (Boston)	\$32; Oct. 22; MPM Capital, Hatteras Venture Partners, Osage University Partners	Raymond Bergeron, University of Florida	Thomas Neenan, chief technology officer and former CEO of Viscus Biologics	Lead is an orally active, small molecule, iron-chelating drug candidate
Audentes Therapeutics (San Francisco)	\$30; July 18; OrbiMed Advisors, 5AM Ventures, Versant Ventures	Thomas Schuetz, formerly VP of clinical affairs at TKT, which pioneered the gene activation platform	Matthew Patterson, former entrepreneur-in-residence with OrbiMed Advisors	AAV gene therapy against X-linked myotubular myopathy, Pompe disease and other rare muscle diseases
Syros Pharmaceuticals (Watertown, Massachusetts)	\$30; April 11; Arch Venture Partners, Flagship Ventures, WuXi PharmaTech Corporate Venture, private investors	Richard Young, MIT; James Bradner, HMS and Dana-Farber Cancer Institute; Nathanael Gray, HMS and Dana-Farber Cancer Institute	Cofounded with ARCH Venture Partners and Flagship's VentureLabs unit	Gene expression; Syros is working with a new class of gene control elements it calls super-enhancers and applying them to cancer

Source: BCIQ: BioCentury Online Intelligence; company websites

Figure 1 Startups by country, 2013. Source: BCIQ: BioCentury Online Intelligence

Table 2 Total, average A round by country, 2013

Country (number of rounds)	Total amount raised (\$M)	Average raised (\$M)
France (5)	99.9	19.9
Switzerland (2)	37.6	18.8
United States (66)	1,100.0	16.7
Ireland (1)	11.9	11.9
Germany (4)	46.0	11.5
United Kingdom (10)	104.5	10.4
The Netherlands (2)	16.2	8.1
Denmark (1)	6.5	6.5
Norway (2)	12.4	6.2
Finland (1)	4.6	4.6
Canada (1)	3.8	3.8
Austria (1)	2.7	2.7
Sweden (1)	1.7	1.7
Iceland (1)	0.9	0.9

Source: BCIQ: BioCentury Online Intelligence